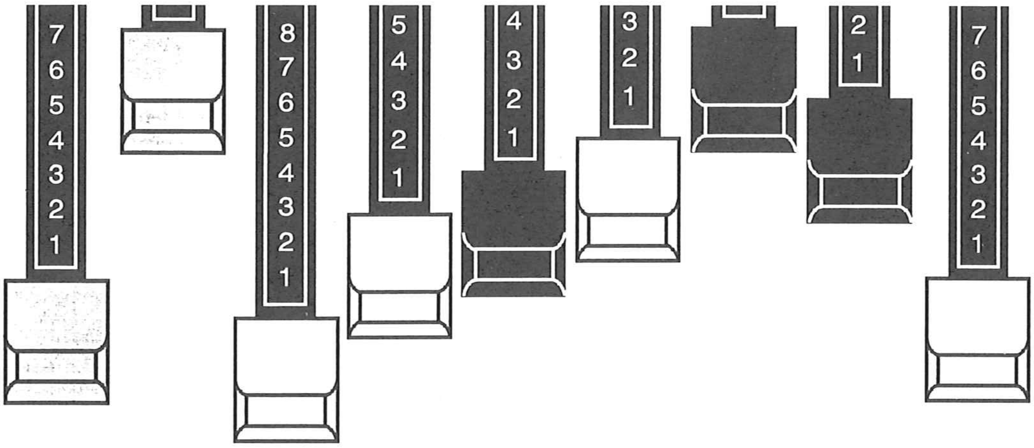
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HAMMOND®

Model XB-2

Version 2.00

OWNER'S PLAYING GUIDE

IMPORTANT SAFETY INSTRUCTIONS

WARNING - As with any electrical or electronic equipment, care should be exercised to prevent fire and shock hazard. The following information is provided to give guidance in the safe use of your Hammond Organ.

Read all of the instructions before using this product.

To reduce the risk of injury, close supervision is necessary when the product is used near children.

Do not use this product near water.

This product may be capable of producing sound levels that would cause permanent hearing loss. Do not operate for a long period of time at a high volume level or at a level that is uncomfortable. If you experience any loss or ringing in the ears, you should consult an audiologist.

This product should be located so that its position does not interfere with proper ventilation and should not be placed near heat sources such as radiators or heat registers.

This product should be connected to a power source only of the type as marked on the product.

The power-supply cord should be unplugged from the outlet when left unused for a long period of time.

Care should be taken so that objects do not fall and liquids are not spilled into the enclosure through openings.

IF YOUR INSTRUMENT FAILS TO OPERATE:

1. Be sure your POWER ON/OFF switch is ON, and the TOTAL VOLUME control is set to at least the half way point.

2. Be sure that at least one voice is selected ON.

3. Make sure headphones are not plugged in to the headphone jack.

4. Make certain that the power cord is plugged in and the "AC" wall receptacle is not faulty.

In the event that the instrument is still inoperable, your Hammond Organ Dealer is best qualified to provide competent service.

THIS PRODUCT SHOULD BE SERVICED BY QUALIFIED SERVICE PERSONNEL WHEN:

A. The power-supply cord or plug has been damaged.

B. Objects have fallen, or liquid has been spilled, into the product.

C. The product has been exposed to rain.

D. The product does not appear to operate normally or exhibits a marked change in performance.

E. The product has been dropped or damaged.

Do not attempt to service this product. All servicing should be referred to qualified service personnel.

This product must be grounded. If it should malfunction or break down, grounding provides a path of least resistance for electric current to reduce the risk of electric shock. This product is equipped with a cord having an equipment-grounded conductor and a grounding plug. The plug must be plugged into an appropriate outlet that is properly installed and grounded in accordance with all local codes and ordinances.

SAVE THESE INSTRUCTIONS

⚡ **CAUTION** ⚠

RISK OF ELECTRIC
SHOCK. DO NOT OPEN!

CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK,
DO NOT REMOVE COVER.
NO USER-SERVICEABLE PARTS INSIDE.
REFER SERVICE TO QUALIFIED SERVICE PERSONNEL.

⚡ This symbol indicates that dangerous voltage constituting a risk of electric shock is present within this unit.

⚠ This symbol indicates that there are important operating and maintenance instructions in the literature accompanying this unit.

WARNING: TO AVOID THE HAZARDS OF FIRE OR ELECTRICAL SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR OTHER MOISTURE.

DANGER: Improper grounding of the equipment-grounding conductor can result in a risk of electric shock. Check with a qualified electrician or serviceman if you are in doubt as to whether the product is properly grounded. Do not modify the plug provided with the product - if it will not fit the outlet, have a proper outlet installed by a qualified electrician.

FEATURES

- The XB-2 is a 61-key Drawbar keyboard.
- The XB-2 utilizes Hammond's DRH™ sound producing system.
- The Information Center Display provides information to the user to allow easier programming of the Menu Functions of the XB-2.
- MIDI IN, OUT and THRU connectors are provided to allow the XB-2 to interface with other MIDI-compatible devices.
- The XB-2 keyboard will transmit MIDI velocity information to other MIDI-compatible devices.
- The XB-2 has 128 user-programmable patches.
- An 11-pin Leslie connector is provided to allow the XB-2 to plug directly into an external Leslie tone cabinet. The XB-2 also contains built-in electronic Leslie circuitry for connection to a standard amplifier.

We thank you for purchasing the Hammond XB-2. It has been designed with the special needs of the performing professional in mind. Ease of operation coupled with programming flexibility and Hammond's all-new DRH™ digital sound system offer you a fantastic array of sounds and features.

This Owner's Guide will explain in detail all of the many playing features of the Hammond XB-2.

Table
Of
Contents

GETTING STARTED

- Basic Hook-Up 2
  - A.C. Power 2
  - Connecting the XB-2 to a Leslie Speaker 2
  - Audio and MIDI Control Connections 3
- Basic Controls 4
  - ON/OFF Power Switch 4
  - Information Center Display 4
  - Drawbars 5
  - Touch Tabs 5
  - Touch Buttons 5
    - SELECT Touch Buttons 5
    - TOUCH ON / TOUCH OFF Touch Buttons 6
    - TOUCH AND HOLD Touch Buttons 6
- Additional Controls 6
  - Pitch Bend Wheel 6
  - Modulation Wheel 6
  - ORGAN SOLO Touch Tab 6
  - Master Volume Control 7
  - Reverb Gain Control 7

INFORMATION CENTER DISPLAY

- Touch Button Functions 10
  - EDIT Touch Button 10
- How to Edit Parameters 11
  - EDIT Touch Button 11
  - Prompter Mark (>) 11
  - Touch ON / Touch OFF Touch Buttons 12
  - SHIFT/CANCEL Touch Button 13
- Menus 14
  - VIBRATO Menu 14
  - TUNE Menu 15
  - PERCUSSION Menu 16
  - FOOT SW Menu 17
  - DRAWBAR Menu 18
  - SPLIT Menu 19
  - MIDI Menu 20
  - EFFECT Menu 22
  - PRESET Menu 23
  - RESET Menu 24

DRAWBARS & PERCUSSION

- How Harmonic Drawbars Work 27
- Sound Groups 28
- Color Groups 29
  - White Drawbars 29
  - Black Drawbars 29
  - Brown Drawbars 30
- Tone Families By Shape 31
- Drawbar Registration Patterns 32
  - Flute family (2 step pattern) 32
  - Reed family (triangle pattern) 33
  - Diapason family (check mark pattern) 34
  - String family (bow pattern) 35

Advanced Features - Drawbars 36
    DRAWBAR1 - Drawbar Voice 37
    DRAWBAR2 - Drawbar Attack 39
    DRAWBAR3 - Drawbar Sustain 41
    DRAWBAR4 - Drawbar Fold Back 43
Percussion 48
    Second Harmonic 48
    Third Harmonic 48
Advanced Features - Percussion 49
    PERCUSSION1 - Percussion Decay & Soft 50
    PERCUSSION2 - Percussion Touch and Velocity 51
        PERCUSSION TOUCH AND VELOCITY CHART 52
    PERCUSSION3 - Percussion Level 53
    PERCUSSION4 - Percussion Drawbar Cancel 55
    PERCUSSION5 - Percussion Key Tracking 57
Advanced Features - Split 61
    SPLIT1 - Split "ON" & Split Point 62
        SPLIT LM CANCEL DATA CHART 63
    SPLIT2 - Split Drawbar Save 65
    SPLIT3 - Split Octave Select 67
        SPLIT OCTAVE SELECT DATA CHART 68
    SPLIT4 - Split LM Cancel 69
        SPLIT LM CANCEL DATA CHART 70

EFFECTS

Vibrato & Chorus 73
    VIBRATO ON Touch Tab 73
    Advanced Features - Vibrato 73
        VIBRATO1 - Vibrato Mode & Speed 74
        VIBRATO2 - Vibrato Split 76
Leslie 78
    LESLIE FAST Touch Tab 78
    Advanced Features - Leslie 78
        EFFECT2 - LESLIE 79
        EFFECT3 - Leslie Speed 80
Over Drive 82
    Advanced Feature - Over Drive 82
        EFFECT1 - OVER DRIVE 83
Reverb 84
    Reverb Gain Control 84
    Advanced Feature - Reverb 84
        EFFECT4 - REVERB 85
        REVERB PROGRAM OPTIONS 86

PRESETS

Preset Banks 88
Presets and Patches 90
    PRESET BANK INFORMATION 91
Advanced Features - Preset 92
    PRESET NUMBER 93
        PRESET SELECT DATA CHART 94
    PRESET BANK LOCK 95
        PRESET BANK LOCK DATA CHART 96
    PRESET RECORD 97
        PRESET RECORD DATA CHART 98
Saving Preset Data 99

PARAMETER DATA TABLE 101
PATCH PARAMETER LIST 102
    FLUTES SINGLE 102
    SOLOS SINGLE 103
    CHORUS SINGLE 104
    PERCUSSION SINGLE 105
    PIPES SINGLE 106
    FLUTES SPLIT 107
    SOLOS SPLIT 108
    CHORUS SPLIT 109
    PERCUSSION SPLIT 110
    PIPES SPLIT 111
    BASIC SINGLE 112
    USER VOICE 113
GLOBAL INITIAL DATA TABLE 114

SPECIAL ADVANCED FEATURES

Advanced Features - Tune 116
    TUNE1 - Master Tune 117
    TUNE2 - Transpose 118
    TUNE3 - Bender Length 120
        BENDER LENGTH OPTIONS 121
Advanced Features - Foot Switch 122
    FOOT SW1 - Function Select 123
        FOOT SW1 FUNCTIONS 124
    FOOT SW2 - Polarity & Mode Select 125
        FOOT SW2 FUNCTIONS 126

MIDI

A Word About What MIDI Can Do 128
Typical MIDI Applications 128
    MIDI IN/MIDI OUT 128
    MIDI THRU 129
    A synthesizer 130
    An external sound module 130
    A personal computer 130
Transmitting MIDI information 131
    NOTE ON / NOTE OFF 131
    VELOCITY 131
    CONTROL CHANGE 131
    PROGRAM CHANGE 131
MIDI Manuals and Zones on the XB-2 132
    MIDI KEY DATA CHART 133
Advanced Features - MIDI 134
    MIDI1 SYSTEM - OMNI and LOCAL 136
        OMNI/LOCAL OPTIONS 137
    MIDI2 SYSTEM - NRPN 138
    MIDI3 SYSTEM - EXP 139
        MIDI EXPRESSION OPTIONS 140
    MIDI4 SYSTEM - IN SPLIT GATE 141
        IN SPLIT GATE DATA CHART 142
    MIDI5 CHANNEL 143
        MIDI CHANNELS - DEFAULT SETTINGS 143
        MIDI CHANNEL OPTIONS 144
    MIDI6 KEYMAP 145
        MIDI KEYMAP OPTIONS 147

- MIDI7 KEYOCTAVE 148
  - MIDI KEYOCTAVE OPTIONS 149
- MIDI8 PROGRAM 150
  - MIDI PROGRAM NUMBER OPTIONS 151
- MIDI9 VOLUME 152
  - MIDI VOLUME OPTIONS 153
- MIDI10 VEL CURVE 154
  - MIDI VELOCITY CURVE SELECTIONS 155
- MIDI11 CONTROL 156
  - MIDI CONTROLLER OPTIONS 157
- MIDI12 FILTER 158
  - PROGNO - Program Number Filter 159
  - VOL.OUT - Volume Out Filter 159
  - DRAWBAR - Drawbar Filter 159
- MIDI Implementation Chart 160
- MIDI Implementation (Each Channel) 161

Special MIDI Features 164
- MEMORY DUMP - DATA OUT 165
  - MEMORY DUMP DATA CHART 166
- MEMORY DUMP - DATA PROTECT 168
  - DATA PROTECT 169
- MEMORY DUMP - DRAWBAR & SWITCH DATA OUT 170

Memory Dump - System Exclusive Information 173

RESET

Selective Reset 176

All Reset 178

REFERENCE

Accessory Panel 182
1. Expression Pedal Jack 182
2. Headphone Jack 182
3. Line Out - Left & Right 182
4. Return Jack 182
5. Send Jack 182
6. Tone Controls 182
7. Foot Switch Jack 182
8. Display Contrast 183
9. MIDI Connectors 183
10. A.C. Power Line Connector 183
11. ON/OFF Power Switch 183
12. 11-pin Leslie Connector 183

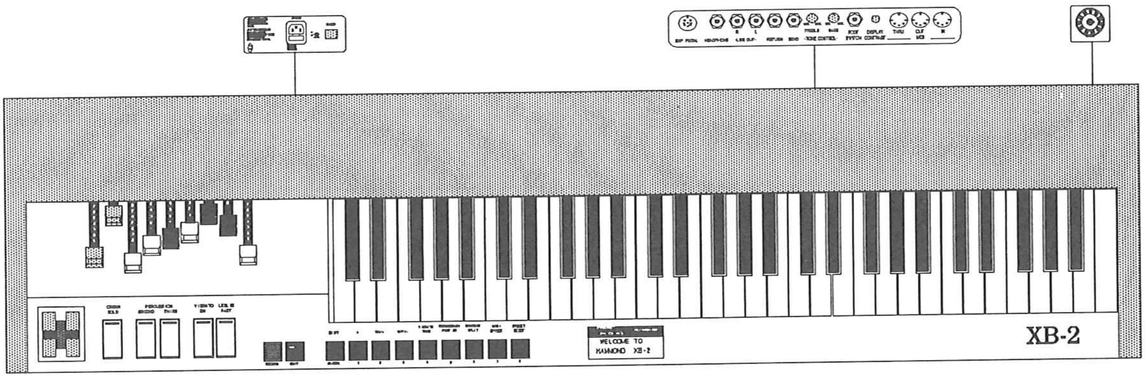
Specifications 184

Instrument Care 185
- Cabinet 185
- Keys and Buttons 185
- Moving Your XB-2 185

Getting Started

GETTING STARTED

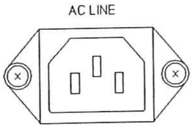
➤ Basic Hook-Up



All connections are found on the back of the instrument. Looking at the back of the XB-2, locate the three Accessory Panels. The large one in the middle is for Foot Switch, Audio and MIDI connections. The large circular plug on the right facing the keyboard is the 11-pin Leslie connector, while the A.C. Power connector and ON/OFF Power Switch are located to the left facing the keyboard. (See the Reference section starting on page 182 for more detailed information about the Accessory Panels.)

A.C. Power

Your Hammond XB-2 is shipped from the factory set for local A.C. power. Locate the A.C. Power Cord and plug the female end into the A.C. power receptacle located on the back of your XB-2, and the male end into your A.C. power outlet.



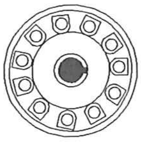
Connecting the XB-2 to a Leslie Speaker

If you want to use a Leslie Speaker with your XB-2, it should be connected before turning the organ power "ON". To do this:

1. Locate the Leslie Connector Cable.

2. Plug the female end of the Connector Cable into the receptacle on the back lower left corner of the Leslie Speaker.

3. Plug the male end of the Connector Cable into the 11-pin Leslie socket found on the back of your XB-2.



NOTE: Both the Leslie connections are "keyed", that is, each connection contains a notch which insures that the pins properly match up.

IMPORTANT NOTE: To connect the organ to a Leslie Speaker having a different pin configuration, you may require a special adapter kit and/or Connector Cable. Contact your Hammond Organ Dealer for more information regarding which adapter kit and/or cable you may need.

Audio and MIDI Control Connections

If you want to connect an external audio source such as a keyboard amp to your XB-2, you should do so before turning the organ power "ON". To do this:

1. Using a patch cord with ¼" plugs on both ends, connect one end of the patch cord to the "L" (left) LINE OUT input jack on the XB-2, and the other end to the input jack of your external audio source.

2. If you are using a mixer, or if your keyboard amp has more than one input, use another patch cord to connect the "R" (right) LINE OUT input jack on the XB-2 to the second input jack of your external audio source.

Before turning the organ's ON/OFF Power Switch "ON", any MIDI devices that you wish to use should be connected. See the MIDI section starting on page 128 for information on how to connect MIDI devices to your organ.

Basic Controls

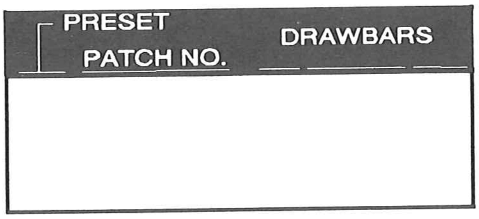
The panel controls on the XB-2 organ include any of the Touch Tabs, Touch Buttons, Drawbars and Wheeled Controls. These controls allow the player to make adjustments and voice changes on the instrument.

ON/OFF Power Switch

Facing the keyboard, the **ON/OFF Power Switch** is located on the back left side next to the A.C. Power Cord. To turn on the XB-2 simply push the Power Switch "in" and you will hear and feel it click "ON". When this switch is in the "ON" position, the Information Center Display will light up.

Information Center Display

The **Information Center Display** is an LCD (Liquid Crystal Display) located to the center of the front rail.



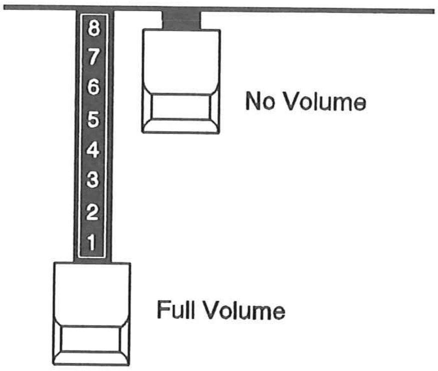
The Information Center Display has two modes: (1) the PLAY mode, and (2) the EDIT mode. The PLAY mode allows you to graphically see the Drawbar settings, monitor or see what Preset has been selected, whether Keyboard Split is active and the Split Point. The EDIT mode allows you to change and edit the XB-2's software parameters such as Sustain Length, Drawbar Voicing, MIDI parameters, and other advanced functions.

NOTE: The PLAY and EDIT modes are covered in detail in later sections of this Owner's Guide.

NOTE: If you cannot see text on the screen clearly, use the control marked CONTRAST located on the Rear panel. To increase the contrast, turn the control knob to the right. To decrease it turn the knob to the left.

Drawbars

There are nine **Drawbars**, sometimes referred to as Tonebars, for the XB-2. When the Keyboard Split feature is active, these same nine Drawbars are used to control the sound registrations for both left and right of the Split Point, in effect creating a two-manual organ. This is explained more fully on page 60.


8
7
6
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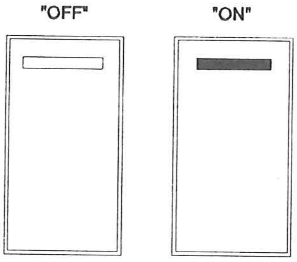
4
3
2
1
No Volume
Full Volume

Pulling a Drawbar out (toward you) will increase the volume in incremental steps from 0 (no sound) to 8 (maximum volume). Pushing the Drawbar back in (away from you) decreases the volume of that Drawbar.

NOTE: See the Keyboard Split section starting on page 59 for more information about the Keyboard Split feature.

NOTE: See the Drawbars & Percussion section starting on page 25 for more information about the Drawbars.

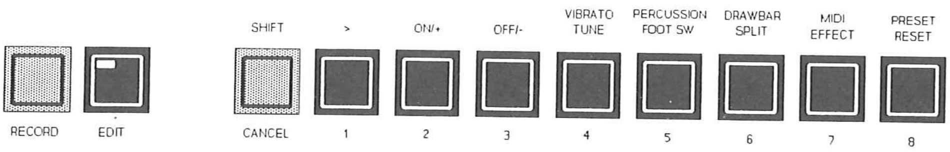
Touch Tabs



Touch Tabs have red LED's (Light Emitting Diodes) or lights in them that will illuminate indicating "ON". Touch Tabs control specific functions such as Percussion, Vibrato, Leslie Speed or Organ Solo.

Touch Buttons

Touch Buttons are the gray and black group of buttons located to the left of the Information Center Display (Liquid Crystal Display).


RECORD
EDIT
SHIFT
CANCEL
>
1
ON/+
2
OFF/-
3
VIBRATO TUNE
4
PERCUSSION FOOT SW
5
DRAWBAR SPLIT
6
MIDI EFFECT
7
PRESET RESET
8

Touch Buttons have three different functions:

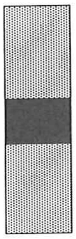
1. **SELECT Touch Buttons** will allow you to select among multiple functions such as selecting a Menu Page or a Preset registration.

2. **TOUCH ON / TOUCH OFF Touch Buttons** turn "ON" or "OFF" specific functions such as Keyboard Split or the EDIT mode.

3. **TOUCH AND HOLD Touch Buttons** will increase or decrease their function in incremental steps when they are touched once, or "scroll" through the steps if touched and held. The new value will be shown in the Information Center Display.

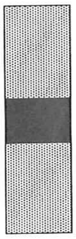
Additional Controls

Pitch Bend Wheel



The **Pitch Bend Wheel** is located to the extreme left of the Touch Tabs. With it, you can adjust the pitch range plus or minus 12 half steps. For more information about how to change the Pitch Bend range, see "Advanced Features - Tune" starting on page 117 of this Owner's Playing Guide.

Modulation Wheel

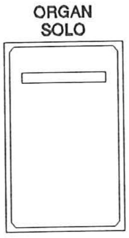


The **Modulation Wheel** is located just to the right of the Pitch Bend Wheel. It has several functions that can be selected:

1. To send MIDI modulation data to a connected MIDI device.
2. To control the Over Drive Level. For more information about how to select and use this function, see "Advanced Feature - Over Drive Level", starting on page 82.

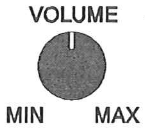
Moving either control forward (away from you) will increase the intensity of the corresponding control. Moving either control downward (toward you) will decrease the corresponding control's level.

ORGAN SOLO Touch Tab



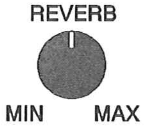
When this Touch Button is selected "ON", the MIDI signals being sent to any other MIDI devices connected to the XB-2 are suspended. Once turned "off," MIDI signals once again will be sent to connected devices.

Master Volume Control



Located on the front rail to the right. Turn this Rotary Control clockwise (right) to increase the overall volume of the XB-2. Turn this control counter-clockwise (left) to decrease the overall volume of the XB-2.

Reverb Gain Control



Located on the front rail to the right next to the Master Volume Control. Turn this Rotary Control clockwise (right) to increase the overall amount of Reverb. Turn this control counter-clockwise (left) to decrease the overall amount of Reverb.

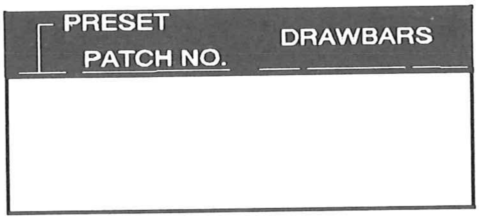
NOTE: More information about Reverb can be found in the Effects section of this Guide starting on page 84.

Hammond XB-2

Information Center Display

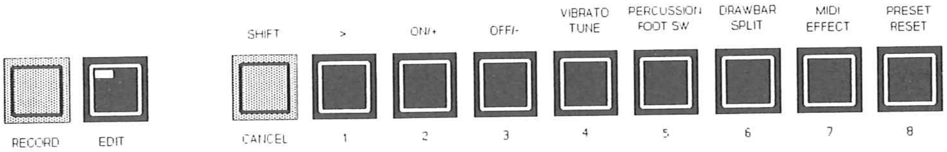
INFORMATION CENTER DISPLAY

The Drawbars, Touch Buttons, Touch Tabs, Rotary Controls and Wheeled Controls control the operations necessary for performance on the XB-2. Advanced Features such as Drawbar Voice Mode, Sustain Length, Attack Mode, etc., are accessed using the Information Center Display. This allows you to see and make changes.


PRESET
PATCH NO.
DRAWBARS

Touch Button Functions

To the left of the display window is a row of gray and black Touch Buttons.


SHIFT
>
ON/+
OFF/-
VIBRATO TUNE
PERCUSSION FOOT SW
DRAWBAR SPLIT
MIDI EFFECT
PRESET RESET
RECORD
EDIT
CANCEL
1
2
3
4
5
6
7
8

These Touch Buttons have two basic functions:

1. Changing Presets.
2. Editing various characteristics of the sound and features.

The Preset function of the Touch Buttons is described in the Presets section of this Guide. This section will describe how to use the Touch Buttons to edit the sounds and features of the XB-2.

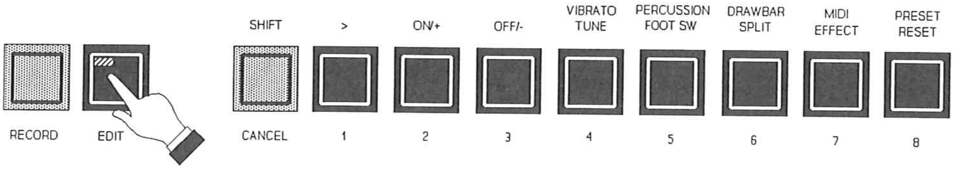
EDIT Touch Button

The EDIT Touch Button allows you to access the various Advanced Feature Menus of the XB-2. When turned "ON", the red LED in the upper left corner of the button will glow continually. The explanation of each Advanced Feature Menu begins on the next page.

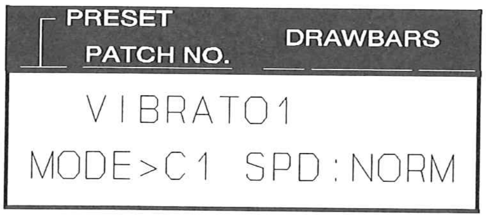
How to Edit Parameters

TRY THIS:

1. After turning the XB-2 "ON", Touch the EDIT Touch Button "ON". The red LED of the EDIT Touch Button will light.


SHIFT
>
ON/+
OFF/-
VIBRATO TUNE
PERCUSSION FOOT SW
DRAWBAR SPLIT
MIDI EFFECT
PRESET RESET
RECORD
EDIT
CANCEL
1
2
3
4
5
6
7
8

The Information Center Display should show the following:


PRESET
PATCH NO.
DRAWBARS

VIBRATO1
MODE>C1 SPD:NORM

The XB-2 is now in EDIT mode.

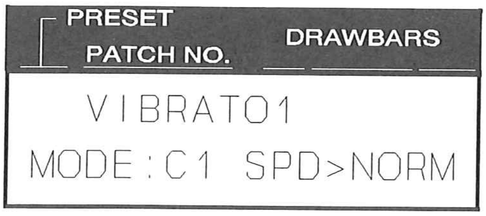
When the XB-2 is in EDIT mode, the Information Center Display will show the following information:

UPPER LINE - Displays the current Menu selection

LOWER LINE - Displays the choice or choices available for the current Menu selection.

On the Lower Line of the Information Center Display, you will see a **Prompter Mark [>]**. This mark is used to let you know which Menu selection is active.

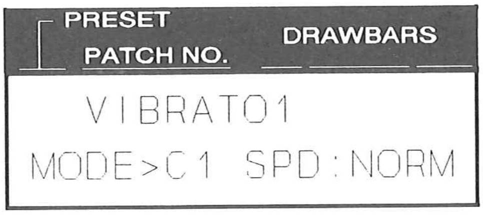
2. Touch the black number 1 [>] Select Touch Button once. The Information Center Display should now show the following:


PRESET
PATCH NO.
DRAWBARS

VIBRATO1
MODE:C1 SPD>NORM

Notice that the Prompter Mark [>] has now moved from between "MODE" and "C1" to between "SPD" and "NORM". This means that the Vibrato Speed can now be changed.

3. Touch the black number 1 [>] Select Touch Button once more. The Information Center Display should now show the following:



```
  VIBRATO1
MODE>C1  SPD:NORM
```

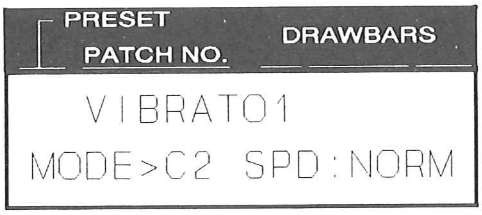
Notice that the Prompter Mark [>] has now moved back between "MODE" and "C1". This means that the Vibrato Mode can now be changed.

Touch ON / Touch OFF Touch Buttons

These two black Touch Buttons are used for the following purposes:

1. Turning something "ON" or "OFF".
2. Modification of parameters - increasing or decreasing.
3. Selecting among multiple functions.

4. Now touch the black number 2 **[ON/+]** Touch Button once. The Information Center Display should now show the following:

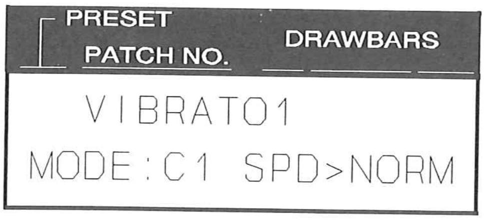


```
  VIBRATO1
MODE>C2  SPD:NORM
```

Notice that "C1" in the Information Center Display is now changed to "C2".

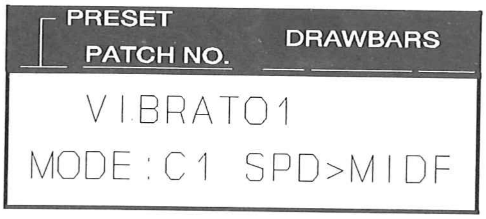
5. Now touch the black number 3 **[OFF/-]** Touch Button once. "C2" in the Information Center Display should change back to "C1".

6. Touch the black number 1 [>] Select Touch Button once. The Information Center Display should show the following:



```
  VIBRATO1
MODE:C1  SPD>NORM
```

7. Touch the black number 2 [ON/+] Touch Button once. The Information Center Display should now show the following:



```
  VIBRATO1
MODE:C1  SPD>MIDF
```

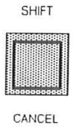
Notice that "NORM" in the Information Center Display is now changed to "MIDF".

8. Now touch the black number 3 [OFF/-] Touch Button once. "MIDF" in the Information Center Display should change back to "NORM".

The specific meanings of these terms will be discussed in each section of this Guide.

SHIFT/CANCEL Touch Button

This gray Touch Button is used to select different Menus within each category, such as Vibrato, Tune, Percussion, etc.



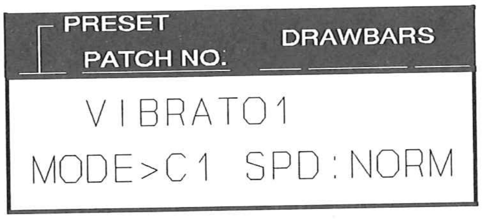
9. Touch the gray SHIFT/CANCEL Select Touch Button once. Notice that "VIBRATO1" on the Upper Line of the Information Center Display is now changed to "VIBRATO2". This allows you to make additional changes to the way Vibrato functions on the XB-2. Touch the gray SHIFT/CANCEL Touch Button once more and "VIBRATO2" will change back to "VIBRATO1" since Vibrato has two Menu choices.

▶ Menus

There are 10 Menus on the XB-2. Each of these Menus allows you to access Advanced Features. These Advanced Features allow you to change parameters, turn something "OFF" or "ON", modify values, etc. These functions are explained in detail throughout this Owner's Playing Guide.

VIBRATO Menu

If you touch the black EDIT Select Touch Button once, the VIBRATO Menu will be the first one displayed. The Information Center Display should look like this when the EDIT Button is touched:



```
   VIBRATO1
MODE>C1  SPD:NORM
```

There are two Advanced Feature Menus which allow you to make the following changes to the XB-2:

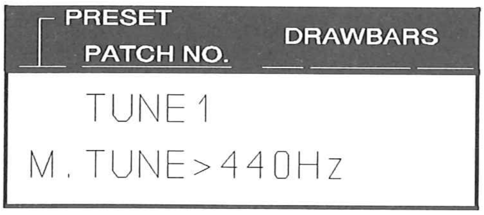
1. Vibrato Mode & Speed -
   Allows you to select two options for the Vibrato: (1) Selecting either Vibrato or Chorus, (2) Selecting from 1 of 5 Vibrato/Chorus Speeds (See page 74).

2. Vibrato Split -
   Allows you to select how the VIBRATO ON Touch Button adds Vibrato to the XB-2 (See page 76).

Use the SHIFT/CANCEL Select Touch Button to select between the various choices for the VIBRATO Menu.

TUNE Menu

From the VIBRATO Menu, Touch the black number 4 (VIBRATO/TUNE) Select Touch Button once. The Information Center Display should look like this:



TUNE 1
M.TUNE>440Hz

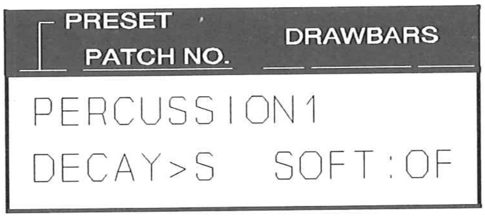
There are three Advanced Feature Menus which allow you to make the following changes to the XB-2:

1. Master Tune -
   Allows you to raise or lower the absolute tuning of the entire instrument (See page 118).
2. Transpose -
   Allows you to transpose the entire instrument either six half-steps up or six half-steps down (See page 119).
3. Bender Length -
   Allows you to set the Upper and Lower limits of the Pitch Bend Wheel for each area of the Keyboard separately (See page 121).

Use the SHIFT/CANCEL Select Touch Button to select the various choices for the TUNE Menu.

PERCUSSION Menu

From the TUNE Menu, Touch the black number 5 (PERCUSSION/FOOT SW) Select Touch Button twice. The Information Center Display should look like this:



```
PERCUSSION1
DECAY>S   SOFT:OF
```

There are five Advanced Feature Menus which allow you to make the following changes to the XB-2:

1. Percussion - Decay & Soft
   Allows you to select two options: (1) Decay amount, Slow or Fast, (2) Turning Soft Volume "ON" or "OFF" (See page 50).

2. Percussion - Touch & Velocity Sensitivity -
   Allows you to select two options for the Percussion: (1) The type of Touch, "touch-response" (single) or "multi" (multi-trigger), (2) Turning "ON" or "OFF" Percussion Velocity Sensitivity (See page 51).

3. Percussion Level -
   Allows you to select the overall level of the Percussion (See page 53).

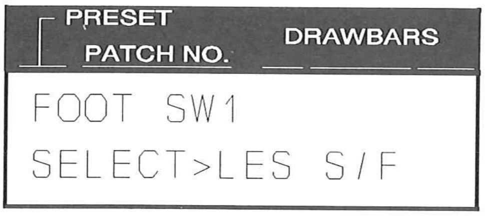
4. Percussion Drawbar Cancel -
   Allows you to select whether or not the 8th harmonic Drawbar will cancel when using Percussion (See page 55).

5. Percussion Key Tracking -
   Allows you to select whether or not the Percussion will taper off slightly at the top end of the Keyboard (See page 57).

Use the SHIFT/CANCEL Select Touch Button to select the various choices for the PERCUSSION Menu.

FOOT SW Menu

From the PERCUSSION Menu, Touch the black number 5 (PERCUSSION/FOOT SW) Select Touch Button once. The Information Center Display should look like this:



```
FOOT SW1
SELECT>LES S/F
```

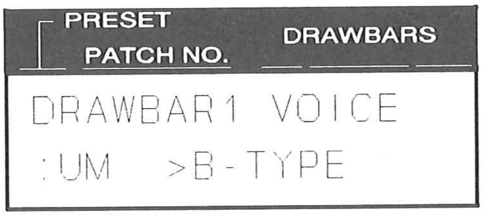
There are two Advanced Feature Menus which allow you to make the following changes to the XB-2:

1. Foot Switch Function Select -
   Allows you to program 1 of 8 separate functions for the Foot Switch plus "OFF" (See page 124).
2. Foot Switch Polarity, Internal/External & Alternate / Momentary Select -
   Allows you to select the Polarity ("+" or "-") for the Foot Switch, select either "ALT" (Alternate [turn-on/turn-off]) or "MOM" (Momentary [turn-on-and-hold]) function for the Foot Switch, and select either "INT" (Internal) or "EXT" (External) for these functions (See page 126).

Use the SHIFT/CANCEL Select Touch Button to select the various choices for the FOOT SW Menu.

DRAWBAR Menu

From the FOOT SW Menu, Touch the black number 6 (DRAWBAR/SPLIT) Select Touch Button twice. The Information Center Display should look like this:



```
DRAWBAR1 VOICE
:UM    >B-TYPE
```

There are four Advanced Feature Menus that allow you to make the following changes to the XB-2:

1. Drawbar Voice Mode -
   Allows you to select from 1 of 3 types of Drawbar Voicing for the Upper and Lower Manuals: "B-TYPE", "MELLOW" and "BRITE" (See page 37).

2. Attack / Click Volume -
   Allows you to select from 1 of 5 types of Attack for the Upper and Lower Manuals: "SLOW ATTACK", "NO CLICK", "SOFT CLICK", "NORMAL CLICK" & "MAX CLICK" (See page 39).

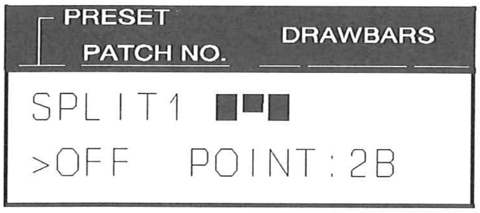
3. Drawbar Sustain -
   Allows you to select from 1 of 3 Sustain Lengths for the Upper and Lower Manuals: "SHORT", "MID" and "LONG" (See page 41).

4. Drawbar Fold Back -
   Allows you to set the Drawbar Fold Back points for both the Sub-Fundamental (16') & 8th harmonic (1') Drawbars. The default settings are the same as the Hammond Models B-3, C-3, RT-3, and A-100: Sub-Fundamental Drawbar at "2C" and 8th harmonic Drawbar at "4G" (See page 43).

Use the SHIFT/CANCEL Select Touch Button to select the various choices for the DRAWBAR Menu.

SPLIT Menu

From the DRAWBAR Menu, Touch the black number 6 (DRAWBAR/SPLIT) Select Touch Button once. The Information Center Display should look like this:



SPLIT1 ■■■
>OFF POINT:2B

There are four Advanced Feature Menus which allow you to make the following changes to the XB-2:

1. Split "ON" & Split Point -
   Allows you to select two options: (1) To turn "ON" or "OFF" the Keyboard Split and (2) to set the Split POINT at which the keyboard splits between Upper Manual (right of split) and Lower Manual (left of split) (See page 62).

2. Split Drawbar Save -
   Allows you to save a Drawbar registration for the Lower Manual (left of split) half of the keyboard (See page 65).

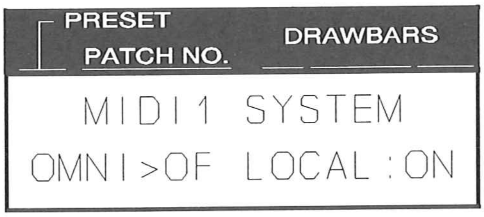
3. Split Octave -
   Allows you to raise the Lower Manual (left of split) Drawbar settings an octave (See page 67).

4. Split LM Cancel -
   Allows you to use the ORGAN SOLO Touch Tab to silence the sound produced by the Drawbars on the "LM" (Lower Manual - left of split) part of the keyboard while Keyboard Split is active (See page 69).

Use the SHIFT/CANCEL Select Touch Button to select the various choices for the SPLIT Menu.

MIDI Menu

From the SPLIT Menu, Touch the black number 7 (MIDI/EFFECT) Select Touch Button twice. The Information Center Display should look like this:



```
 MIDI1 SYSTEM
OMNI>OF LOCAL:ON
```

There are twelve Advanced Feature Menus which allow you to make the following changes to the XB-2:

1. MIDI OMNI ON / OFF and LOCAL ON / OFF -
   Allows you to select OMNI Mode "ON" or "OFF" and Local Control "ON" or "OFF" (See page 137).

2. MIDI NRPN ON / OFF -
   Allows you to turn "ON" or "OFF" NRPN (Non Registered Program Number) (See page 139).

3. MIDI EXP INTERNAL / EXTERNAL -
   Allows you to choose whether you want to control the volume of a connected MIDI device from the Expression Pedal (See page 140).

4. MIDI IN SPLIT GATE -
   Allows you to select how the XB-2 responds to incoming MIDI Key data (See page 142).

5. MIDI CHANNEL -
   Allows you to select MIDI Channels (See page 144).

6. MIDI KEYMAP -
   Allows you to set the Low and High note ranges for the Keymap zones (See page 146).

7. MIDI KEYOCTAVE -
   Allows you to change the octave ranges of the different areas of the Keyboard within ±4 octaves (See page 149).

8. MIDI PROGRAM -
   Allows you to select Program Numbers (See page 151).

9. MIDI VOLUME -
   Allows you to set the maximum and minimum Volume ranges (See page 153).

10. MIDI VELOCITY CURVE -
    Allows you to select the Velocity Curve you wish (See page 154).

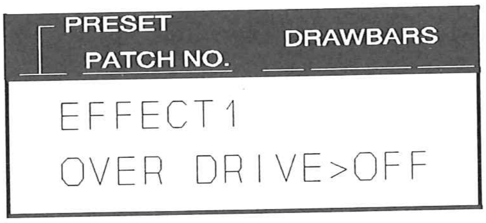
11. MIDI CONTROL -
    Allows you to set the Controller number for the Foot Switch, Modulation Wheel, Expression Pedal, and LESLIE FAST Touch Tab (See page 156).

12. MIDI FILTER -
    Allows you to turn "ON" or "OFF" Program Number Filter, Volume Out Filter and Drawbar Filter (See page 158).

Use the SHIFT/CANCEL Select Touch Button to select the various choices for the MIDI Menu.

EFFECT Menu

From the MIDI Menu, Touch the black number 7 (MIDI/EFFECT) Select Touch Button once. The Information Center Display should look like this:



```
EFFECT1
OVER DRIVE>OFF
```

There are four Advanced Feature Menus which allow you to make the following changes to the XB-2:

1. Over Drive-
   Allows you to turn "ON" the Over Drive effect so that it can be controlled using the Modulation Wheel (See page 82).

2. Leslie ON / OFF -
   Allows you to disable the internal Electronic Leslie effect (See page 79).

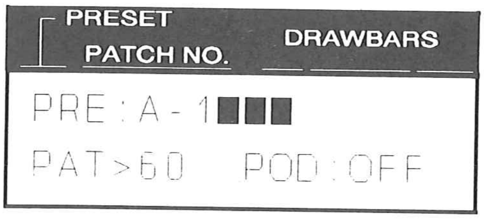
3. Leslie Speed -
   Allows you to select the settings for the electronic Leslie Speed & Rise and Fall times (See page 80).

4. Reverb -
   Allows you to select one of four digital Reverb programs (See page 84).

Use the SHIFT/CANCEL Select Touch Button to select the various choices for the EFFECT Menu.

PRESET Menu

From the EFFECT Menu, Touch the black number 8 (PRESET/RESET) Select Touch Button twice. The Information Center Display should look like this:



```
PRE:A-1■■■
PAT>60   POD:OFF
```

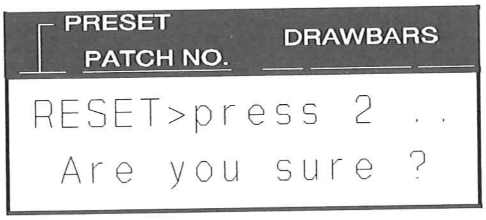
There are three Advanced Feature Menus that allow you to make the following changes to the XB-2:

1. Preset Select -
   Allows you to select the Patch number for each Preset, and turn Drawbar Priority "ON" or "OFF" (See page 93).
2. Preset Bank Lock -
   Allows you to select whether you want to "lock in" any of the four Preset Banks on the Preset Touch Buttons (See page 95).
3. Preset Record Mode -
   Allows you to select whether you want to update a Preset, a Patch or both (See page 97).

Use the SHIFT/CANCEL Select Touch Button to select the various choices for the PRESET Menu.

RESET Menu

From the PRESET Menu, Touch the black number 8 (PRESET/RESET) Select Touch Button once. The Information Center Display should look like this:



```
RESET>press 2 ..
 Are you sure ?
```

There is one Advanced Feature menu which allows you to do the following:

1. Selective Reset -
   Allows you to Reset the Advanced Feature parameters accessed by the EDIT and SHIFT Touch Buttons back to factory settings (See page 177).

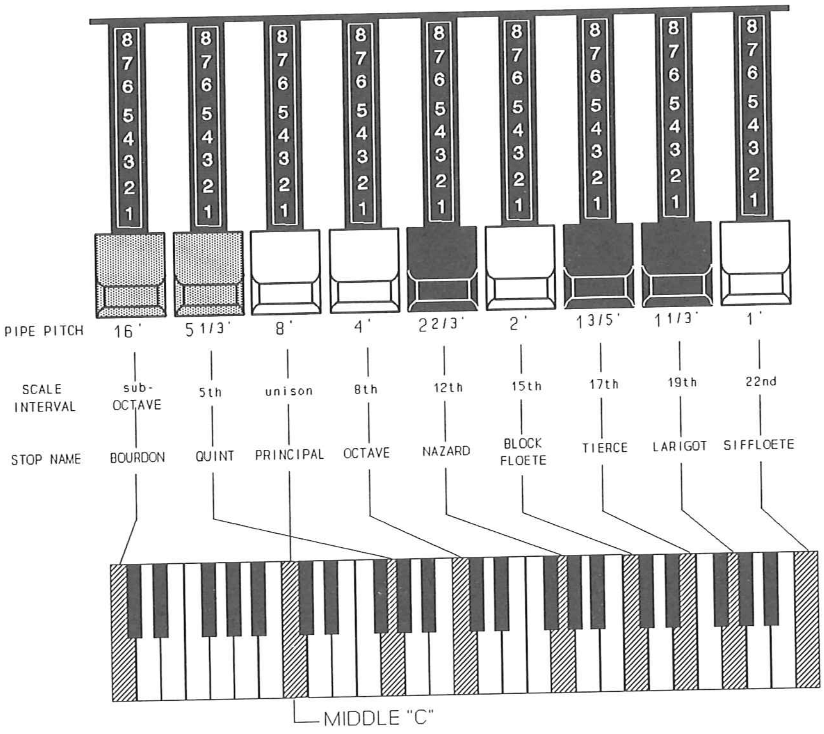
Since this Menu has only one selection, touching the SHIFT/CANCEL Touch Button will have no effect.

Drawbars
&
Percussion

DRAWBARS

The XB-2 has 1 set of nine Drawbars. Drawbars, often called Tonebars, are the heart and the basis of the renowned Hammond Sound and have been used since the first Hammond Organ Model A introduced in 1935.

There are approximately 253,000,000 possible sound combinations that can be produced by these Drawbars. Each Drawbar consists of sine waves of different pitches (which means tone depth). The illustration below shows how each Drawbar relates to the keyboard when middle "C" is pressed.


8
7
6
5
4
3
2
1
PIPE PITCH
16'
5 1/3'
8'
4'
2 2/3'
2'
1 3/5'
1 1/3'
1'
SCALE INTERVAL
sub-OCTAVE
5th
unison
8th
12th
15th
17th
19th
22nd
STOP NAME
BOURDON
QUINT
PRINCIPAL
OCTAVE
NAZARD
BLOCK FLOETE
TIERCE
LARIGOT
SIFFLOETE
MIDDLE "C"

Each Drawbar is marked with a number followed by a footage mark. For example, the first white drawbar is marked "8'". This is pipe organ terminology indicating that the pipe used to produce the lowest note on the keyboard on a pipe organ is actually eight feet long. The numbers from "1" to "8" on each Drawbar represent degrees of loudness - number 1 being the softest, and number 8 being the loudest.

How Harmonic Drawbars Work

To take the fullest advantage of the harmonic Drawbars of the Hammond Organ, it is necessary to understand what "music" really is. All sounds, musical or otherwise are created by sending impulses or vibrations through the air. These are "felt" in the sensitive mechanism of our ears - a process we call "hearing". While you may think that you hear a single individual sound, actually each sound, or musical note, consists of a "fundamental" or basic tone, and a number of "harmonics" or overtones - the latter being different when the same note is played on different instruments.

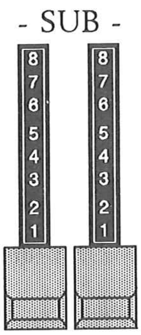
For instance, when you play "A" above middle "C" on any instrument - organ, piano, violin, trumpet, or any other - you are creating a vibration at the rate of 440 impulses per second, provided of course that the instrument is in proper tune. This is known as the "fundamental" of this "A". However, the harmonics or overtones which accompany this fundamental of "A" on the piano would be quite different from those you would hear if you played the same note on, say, a violin or a trumpet. This difference in harmonic structure is what distinguishes the sound of a piano from that of a violin or another instrument, and is created by a combination of differences in the materials and shape of the instrument, and the manner of playing.

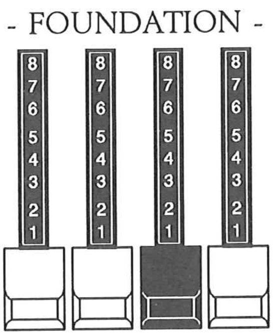
Now it is apparent that if you have available a source of sound which will provide the fundamental sound of each note on the keyboard, plus a source of a large number of harmonics, you are in a position to combine these fundamentals and harmonics into musical tones similar to those of almost any instrument with which you may be familiar. And that is just what the harmonic Drawbars of the Hammond Organ do for you. Turn to the next page to get started understanding Drawbars.

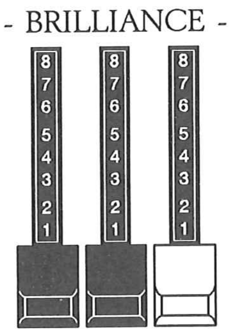
Drawbars are divided into 3 groups of sound as well as 3 groups of color. We will first look at the 3 sound groups.

➤ Sound Groups

You may think of these sound groups in terms of the three levels - the Sub being the deep pitches, the Foundation being the mid range of pitches and the Brilliance being the high pitches.







TRY THIS:

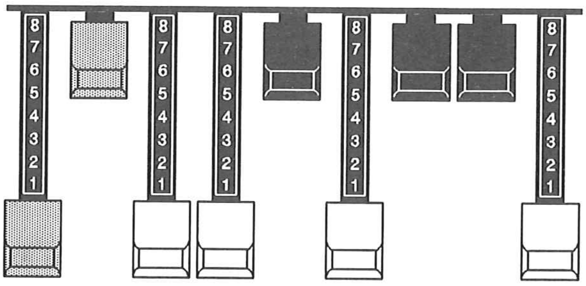
1. Make sure all Drawbars are "IN" (off).
2. Hold down a "C" chord, starting with "E" above middle "C", ("E", "G" & "C" notes) with your right hand on the keyboard.
3. Starting with the 8' Drawbar, pull out and push in each of the Foundation Drawbars one group at a time until you have a sound that you like.
4. While still holding the "C" chord down, pull each of the brown Sub Drawbars out until you like the sound.
5. Now do the same with the Brilliance Drawbars.

It's that easy to create your own custom Drawbar settings.

Color Groups

White Drawbars

The first white Drawbar represents the "fundamental" or "8' base" tone. All of the other white Drawbars are octave intervals or harmonics of the fundamental tone. The tonal brilliance is greatly increased by adding white Drawbars, but the harmonics added are always in "consonance" or harmony.



CONSONANT HARMONICS

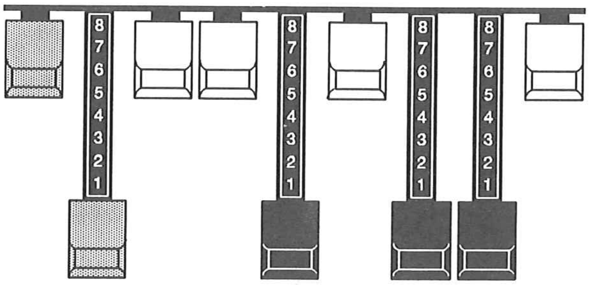
TRY THIS:

1. Make sure all Drawbars are "IN" (off).
2. Hold down middle "C" on the keyboard.
3. Pull the first white Drawbar, marked 8', all the way out.
4. Now, one by one, pull the other white Drawbars out in sequence.

As you add each Drawbar, you will hear the addition of the same note an octave higher in each case.

Black Drawbars

The Black Drawbars on the Hammond Organ represent the dissonant (discordant) harmonics which are also necessary in building rich tone colors. The mellowness of a horn, the pungency of strings, and the brilliance of reed voices owe much of their character to the presence of these harmonics in different degrees.

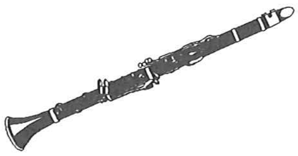


DISSONANT HARMONICS

TRY THIS:

1. Make sure all Drawbars are "IN" (off).
2. Hold down middle "C" on the keyboard.
3. Pull the first white Drawbar, marked 8', all the way out.
4. Now pull the 3 Black Drawbars all the way out.

The sound produced by the Drawbars is that of a clarinet.



Brown Drawbars

In addition to the white and black Drawbars, there are two brown Drawbars in the group. These two Drawbars produce "sub-octave" effects. The first brown Drawbar is the sub-octave of the fundamental 8' Drawbar. It is "one octave" lower in sound.

TRY THIS:

1. Make sure all Drawbars are "IN" (off).
2. Hold down middle "C" on the keyboard.
3. Pull the first white Drawbar, marked 8', all the way out.
4. While continuing to hold middle "C" down, pull the first brown Drawbar, marked 16', all the way out.

You will now hear the sound of "C" one octave lower being added.

The second brown Drawbar is the "sub-octave" of the third harmonic. Both of these Drawbars are used to add depth and richness to many combinations. They also increase the range of the keyboard by one octave since a solo registration of the "8 foot," or normal pitch, can be set up using the first brown Drawbar as the fundamental and played one octave higher.

TRY THIS:

1. Make sure all Drawbars are "IN" (off).

2. Hold down middle "C" on the keyboard.

3. Pull the first white Drawbar, marked 8', all the way out.

4. While continuing to hold middle "C" down, pull the first brown Drawbar, marked 16', all the way out. You will now hear the sound of "C" one octave lower being added.

5. Now pull the second brown Drawbar out, and you will hear it add a richness to the sound of the "C" note that you are holding down.

➤ Tone Families By Shape

Regardless of the size of a pipe organ or its number of stops, all of its voices are related to four basic families of tone. The four basic families - Flute, Reed, String and Diapason - can be quickly set up on the Drawbars by relating a pattern or shape to each family.

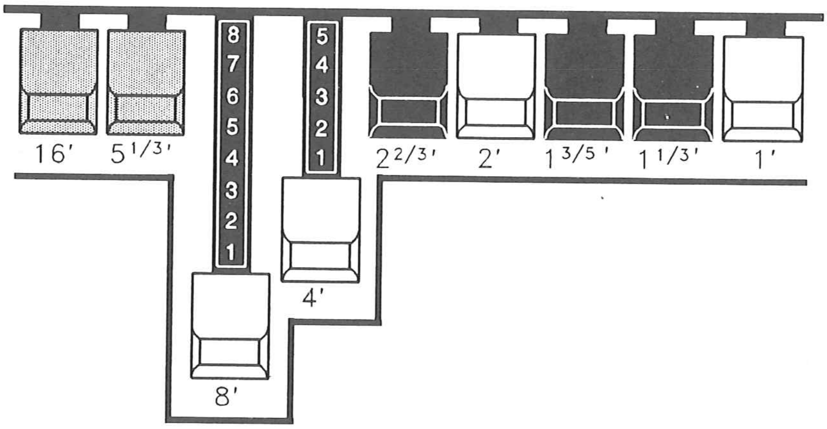
These are the generalities which apply to the tonal resources of the organ, and in themselves produce pleasant and usable effects. However, real beauty of tone is secured in two ways. The first way is to use registrations which have been devised by organists. The second way, and eventually the one that best expresses your own feeling for the music, is to create your own tonal effects, experimenting with and perfecting tones which you use to play your favorite selections.

The Hammond Organ Drawbars allow you not only to set up any tonal effect you want, but also to make many fine variations of the tone. Only with the Hammond Drawbars can you play exactly the shade of tone you want for every selection and, perhaps even more important, for every size and type of room in which you play.

With the Hammond Organ Drawbars, a touch of a finger is all that is needed to make the tone quality softer or more brilliant, richer in one harmonic or another.

Typical Drawbar Registration Patterns For The Four Families Of Organ Sound

➤ Flute family (2 step pattern)



A Basic Flute Tone

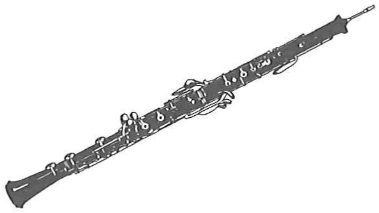
There are literally hundreds of flute tones available on the Hammond Organ, in contrast to other types of organs on which you can play only one or perhaps two or three tones which are set up at the factory. By simply changing the relative positions of the 8' and 4' Drawbars to 00 3700 000, you can create a light concert type of flute. Or by closing the 4' Drawbar altogether and adding a little of the $2^{2}/_{3}$' Drawbar plus a heavier fundamental, you can get a solo tibia - 00 8020 000.

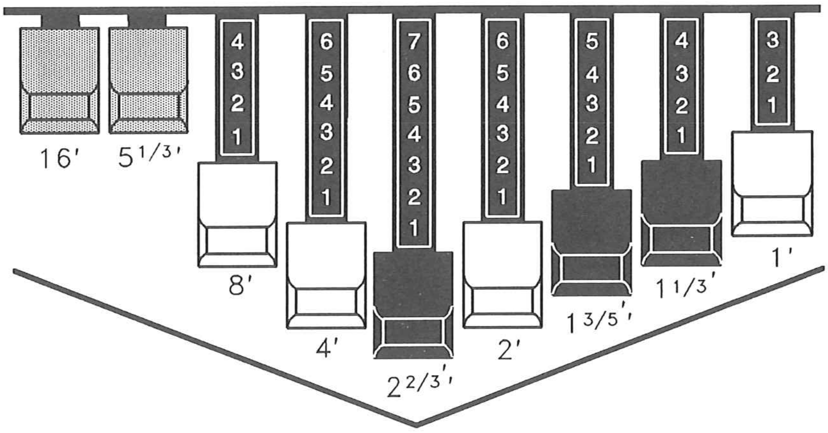
Any combination of white Drawbars provides various flute tones; the first brown Drawbar adds depth.

Flute Tones

Accompaniment Flute I 8'	00 8460 000
Accompaniment Flute II 8'	00 3220 000
Accompaniment Flute III 8'	00 8600 000
Blokflöte 8'	00 5310 000
Blokflöte 4'	00 0503 010
Chorus of Flutes 16'	80 8605 002
Concert Flute 8'	00 6300 000
Flute 8'	00 6201 000
Flute 4'	00 0602 001
Flute 2'	00 0106 004
Flute (Organ type) 16'	50 3000 000
Flute (Organ type) 8'	00 5300 000
Flute (Organ type) 4'	00 0503 000
Flute (Organ type) 2'	00 0005 000
Nazard 2 2/3	00 0030 000
Open Flute 8'	00 7510 000
Orchestral Flute 8'	00 3831 000
Piccolo 2'	00 0006 003
Principal Flute 8'	00 8530 000
Stopped Flute 8'	00 5020 000
Tibia 8'	00 7030 000
Tibia 4'	00 0700 030
Tibia (Solo) 8'	00 8020 000
Tibia (Theater) 16'	80 8605 004
Wooden Open Flute 8'	00 8840 000

▶ Reed family (triangle pattern)





A Basic Reed Tone

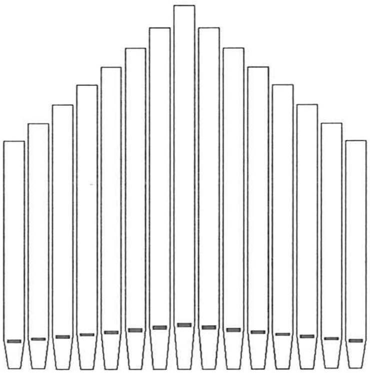
The reeds are more brilliant and numerous than any other tone group. Many are used as solo stops because of their strong personalities.

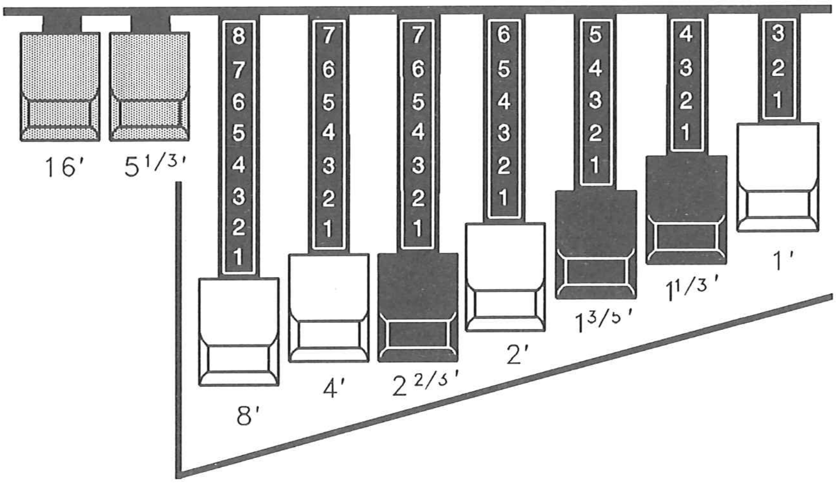
Reed tones include the brasses and woodwinds. The tones of the woodwinds are created by vibrating reeds. The oboe, a typical reed tone, is obtained by emphasizing the Drawbars in the middle of the group, with nearly as much of the first black Drawbar as the fundamental itself. Use of the first black Drawbar is typical of many reed registrations. It creates a "triangle" pattern that is easy to remember. The triangle pattern of a less powerful registration, 00 2333 200, is a useful accompaniment tone.

Reed Tones

Bassoon 16'	44 7000 000
Bassoon 8'	08 7500 000
Bombarde 16'	86 8400 000
Chorus Reed 8'	00 7777 750
Clarinet 8'	00 6070 540
Clarinet 8'	00 6060 300
English Horn 8'	00 3682 210
Flugel Horn 8'	00 5777 530
French Horn	00 7654 321
Kinura 8'	00 0172 786
Oboe (Orchestral) 8'	00 4764 210
Oboe (Organ type) 8'	00 4571 320
Oboe Horn 8'	00 4675 210
Post Horn 8'	00 6677 530
Reed Chorus	63 8888 863
Saxophone 16'	86 7100 000
Saxophone 8'	01 8762 431
Trombone 8'	01 8777 530
Trumpet (Orchestral) 8'	00 6788 650
Trumpet (Organ type) 8'	00 7677 320
Tuba (Organ type) 16'	88 8864 000
Tuba (Organ type)	03 6888 760
Tuba Sonora 8'	02 7788 640
Vox Humana 16'	33 6045 000
Vox Humana 8'	00 4720 123

Diapason family (check mark pattern)





A Basic Diapason Tone

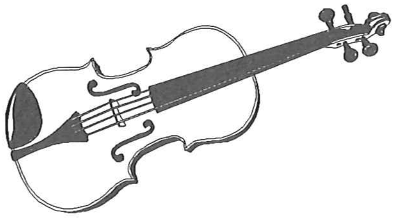
All diapason tones are characterized by a strong fundamental and second harmonic with relatively weak upper harmonics. Diapason tones are more affected by good or bad acoustics than are the tones of more pronounced character. Registration that is good in one location may not be satisfactory in another. The "phonon" type of diapason was developed on pipe organs by designers who wanted to produce a soft foundation tone.

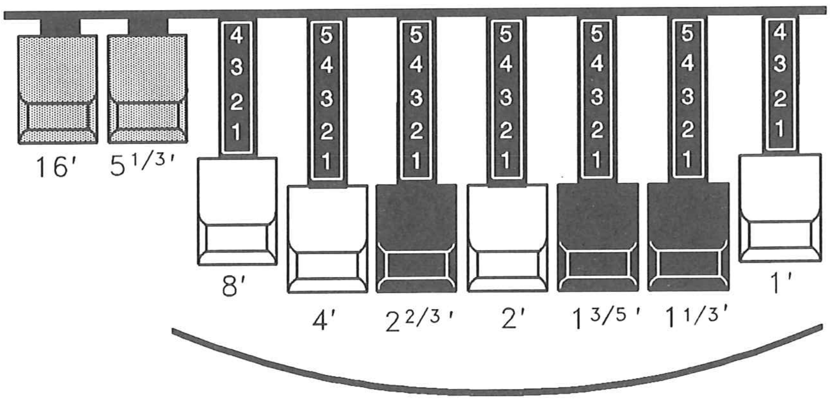
In discussing tone as a structure, diapason tones lie between the flute tones, which are almost devoid of upper harmonics, and the string tones, which are characterized by strong upper harmonic development.

Diapason Tones

Accomp. Diapason 8'	00 8874 210
Chorus Diapason 16'	84 8421 000
Chorus Diapason 8'	00 8686 310
Chorus Diapason 4'	00 0806 085
Diapason I 8'	00 7785 321
Diapason II 8'	00 7783 210
Diapason Chorus 8'	61 8855 424
Echo Diapason 16'	43 4421 000
Echo Diapason 8'	00 4434 210
Harmonic Diapason 16'	85 8524 100
Harmonic Diapason I 8'	00 8877 760
Harmonic Diapason II 8'	00 8678 453
Harmonic Diapason III 8'	00 6546 532
Harmonic Diapason 4'	00 0606 045
Horn Diapason 16'	77 7621 000
Horn Diapason 8'	00 8887 480
Open Diapason I 8'	01 8866 430
Open Diapason II 8'	00 8745 423
Open Diapason III 8'	01 6655 320
Solo Diapason 16'	85 8544 000
Solo Diapason 8'	01 8855 331
Solo Diapason 4'	00 0818 055
Wood Diapason 16'	82 7311 000
Wood Diapason 8'	00 7754 321

▶ String family (bow pattern)





A Basic String Tone

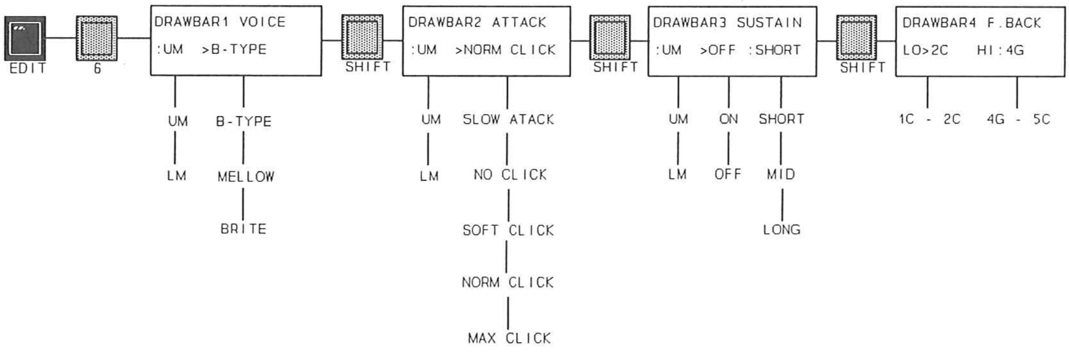
The fourth and last of the organ "family" groups is the string family, both organ and orchestral. String tone qualities are characterized by especially strong upper harmonic development. The fundamental and second harmonic structure is the opposite of flutes.

There are many hundreds of possible string tone registrations. Every string tone can be made either "dull" or "bright" by varying the amount of the upper harmonics. In fact, the string family, considered the most versatile of the four tone families, can be soft or loud, single strings or groups and used as solos or accompaniments.

String Tones

Cello 8'	00 3564 534
Cello 8'	00 3564 211
Dulciana 8'	00 7770 000
Gamba 8'	00 3484 443
Gamba 8'	00 3474 121
Gemshorn 8'	00 4741 321
Gross Gamba 8'	00 4786 543
Harmonica (Organ type) 8'	00 1233 321
Keen Strings 8'	00 1687 664
Muted String 8'	00 2452 010
Orchestral String 8'	00 1464 321
Salicional 16'	25 4321 000
Salicional 8'	00 2453 321
Salicional 4'	00 0204 052
Soft String 16'	13 3210 000
Soft String 8'	00 1332 320
Solo Cello 8'	00 3485 543
Solo Viola 8'	00 2474 341
Solo Violin 8'	00 3654 324
String Organ	22 5787 765
String Organ	22 4767 765
Viola da Gamba 8'	00 2465 432
Violin 8'	00 2334 434
Violin 8'	00 2382 233
Violin 8'	00 2476 264
Violina 4'	00 0103 064
Violine 16'	26 3431 000

Advanced Features - Drawbars


EDIT
6
DRAWBAR1 VOICE
:UM >B-TYPE
UM
LM
B-TYPE
MELLOW
BRITE
SHIFT
DRAWBAR2 ATTACK
:UM >NORM CLICK
UM
LM
SLOW ATACK
NO CLICK
SOFT CLICK
NORM CLICK
MAX CLICK
SHIFT
DRAWBAR3 SUSTAIN
:UM >OFF :SHORT
UM
LM
ON
OFF
SHORT
MID
LONG
SHIFT
DRAWBAR4 F.BACK
LO>2C HI:4G
1C - 2C
4G - 5C

These Advanced Feature Menus allow you to make the following changes to the XB-2's Drawbars:

1. Drawbar Voice Mode -
   This Advanced Feature allows you to select from 1 of 3 types of Drawbar Voicing for the Upper and Lower Manuals: "B-TYPE", "MELLOW" and "BRITE".

2. Attack Click Volume -
   This Advanced Feature allows you to select from 1 of 5 types of Attack for the Upper and Lower Manuals: "SLOW ATTACK", "NO CLICK", "SOFT CLICK", "NORMAL CLICK" & "MAX CLICK".

3. Drawbar Sustain -
   Allows you to select from 1 of 3 Sustain Lengths for the Upper and Lower Manuals: "SHORT", "MID" and "LONG".

4. Drawbar Fold Back -
   This Advanced Feature allows you to set the Drawbar Fold Back points for both the Sub-Fundamental (16') & 8th harmonic (1') Drawbars. The default settings are the same as the Hammond Models B-3, C-3, RT-3, and A-100: Sub-Fundamental Drawbar at C2 and 8th harmonic Drawbar at 4G.

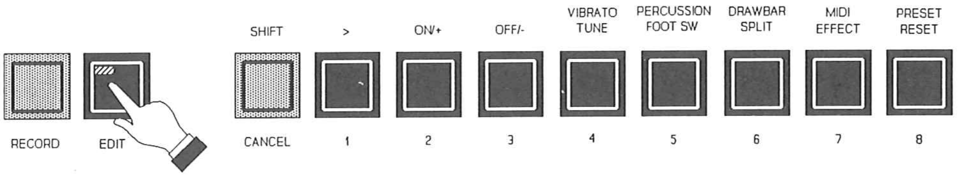
The following pages give a more detailed explanation of how these Advanced Feature Menus work.

DRAWBAR1 - Drawbar Voice = EDIT + 6

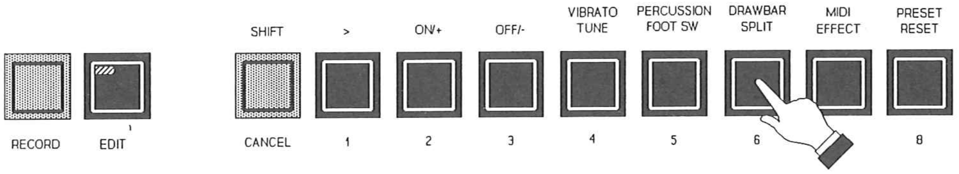
This Advanced Feature allows you to select from 1 of 3 types of voicing the Drawbars produce for both "UM" (Upper Manual - right of split) and "LM" (Lower Manual - left of split): "B-TYPE", "MELLOW", or "BRITE".

To access the DRAWBAR1 Menu Page, do the following:

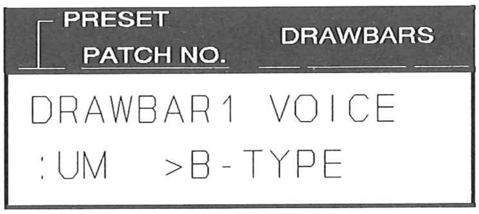
1. Touch the EDIT Touch Button "ON" (red LED lit).


SHIFT
>
ON/+
OFF/-
VIBRATO TUNE
PERCUSSION FOOT SW
DRAWBAR SPLIT
MIDI EFFECT
PRESET RESET
RECORD
EDIT
CANCEL
1
2
3
4
5
6
7
8

2. Touch the black number 6 [DRAWBAR/SPLIT] Touch Button once.


SHIFT
>
ON/+
OFF/-
VIBRATO TUNE
PERCUSSION FOOT SW
DRAWBAR SPLIT
MIDI EFFECT
PRESET RESET
RECORD
EDIT
CANCEL
1
2
3
4
5
6
8

The Information Center Display should show the following:


PRESET
PATCH NO.
DRAWBARS

DRAWBAR1 VOICE
:UM >B-TYPE

3. Now select the Voicing Type for each Manual by doing the following:

   Use the black number 1 [>] Select Touch Button to move the Prompter Mark [>] between Manual selections and Voicing selections.

   Use the black number 2 [ON/+] and the number 3 [OFF/-] Touch Buttons to select the Manual and Drawbar Voicing.

The data chart below shows the options you may select for Upper Manual (right of split) and Lower Manual (left of split).

DRAWBAR VOICING OPTIONS	DRAWBAR VOICING DESCRIPTION
*B-TYPE	The Drawbar sounds have all the harmonic characteristics of the original B-3.
MELLOW	Produces a mellow sound reducing the highs.
BRITE	Produces a brite sound adding more highs.

*default setting

This data CAN be stored to a Patch. This means that each Patch can store a different Drawbar Voicing setting. To see a total listing of all parameters that can be saved to a Patch, see the Parameter Data Table on page 101.

NOTE: You will not hear any change while in "LM" Menu Page unless you have the Keyboard Split "ON". See page 61 for more information about the Keyboard Split Advanced Feature.

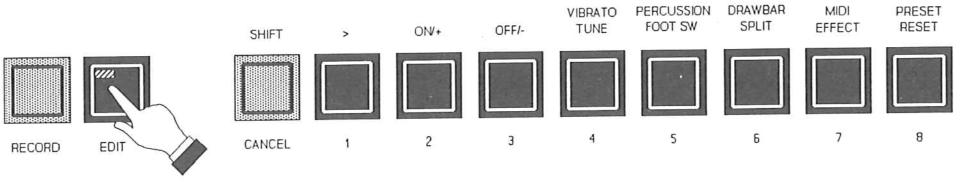
To EXIT this menu, simply touch the EDIT Touch Button.

DRAWBAR2 - Drawbar Attack = EDIT + 6 + SHIFT

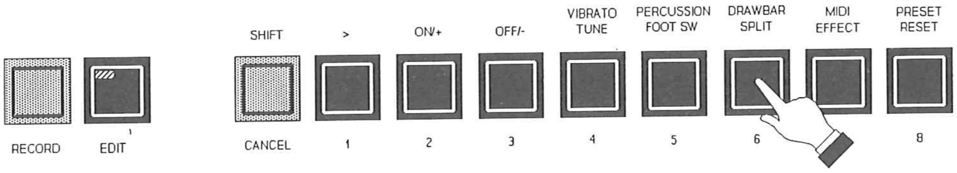
This Advanced Feature allows you to select from 1 of 5 types of Attack for both "UM" (Upper Manual - right of split) and "LM" (Lower Manual - left of split): "SLOW ATTACK", "NO CLICK", "SOFT CLICK", "NORMAL CLICK" & "MAX CLICK".

To access the DRAWBAR2 Menu Page, do the following:

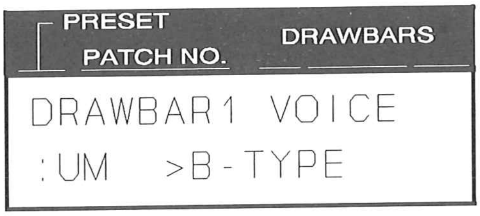
1. Touch the EDIT Touch Button "ON" (red LED lit).


SHIFT
>
ON/+
OFF/-
VIBRATO TUNE
PERCUSSION FOOT SW
DRAWBAR SPLIT
MIDI EFFECT
PRESET RESET
RECORD
EDIT
CANCEL
1
2
3
4
5
6
7
8

2. Touch the black number 6 [DRAWBAR/SPLIT] Touch Button once.

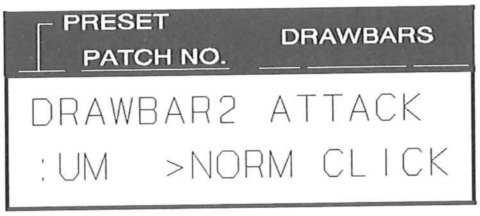

SHIFT
>
ON/+
OFF/-
VIBRATO TUNE
PERCUSSION FOOT SW
DRAWBAR SPLIT
MIDI EFFECT
PRESET RESET
RECORD
EDIT
CANCEL
1
2
3
4
5
6
8

The Information Center Display should show the following:


PRESET
PATCH NO.
DRAWBARS

```
DRAWBAR1 VOICE
:UM    >B-TYPE
```

3. Touch the gray SHIFT Touch Button once. The Information Center Display should show the following:


PRESET
PATCH NO.
DRAWBARS

```
DRAWBAR2 ATTACK
:UM    >NORM CLICK
```

The default setting for both "UM" (Upper Manual - right of split) and "LM" (Lower Manual - left of split) is "NORM CLICK". This will produce a sound like that of the original B-3.

3. Now select the Attack Type for each Manual by doing the following:

   Use the black number 1 [>] Select Touch Button to move the Prompter Mark [>] between Manual selections and Attack selections.

   Use the black number 2 [ON/+] and number 3 [OFF/-] Touch Buttons to select the Manual and Drawbar Attack.

The data chart below shows the options you may select for Upper Manual (right of split) and Lower Manual (left of split).

DRAWBAR ATTACK / CLICK OPTIONS
SLOW ATTACK
NO CLICK
SOFT CLICK
*NORMAL CLICK
MAX CLICK

*default setting

This data CAN be stored to a Patch. This means that each Patch can store a different Attack / Click setting. To see a total listing of all parameters that can be saved to a Patch, see the Parameter Data Table on page 101.

NOTE: You will not hear any change while in "LM" Menu Page unless you have the Keyboard Split "ON". See page 61 for more information about the Keyboard Split Advanced Feature.

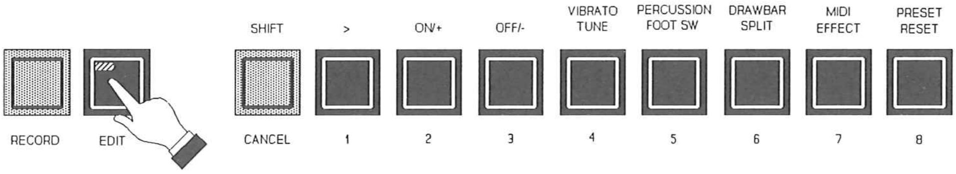
To EXIT this menu, simply touch the EDIT Touch Button.

DRAWBAR3 - Drawbar Sustain = EDIT + 6 + SHIFT + SHIFT

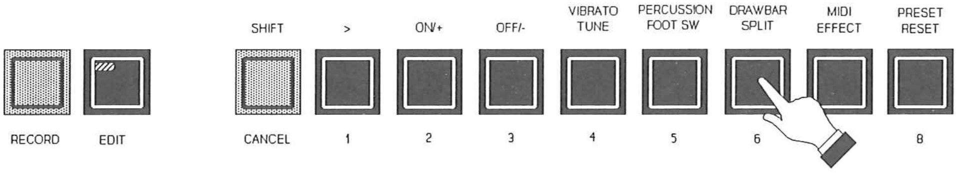
There are two function selections to this Advanced Feature Menu Page: (1) To turn Sustain "ON" or "OFF" for "UM" (Upper Manual - right of split) or "LM" (Lower Manual - left of split), and (2) To set the Sustain Length for both Upper Manual and Lower Manual.

To access the DRAWBAR3 Menu Page, do the following:

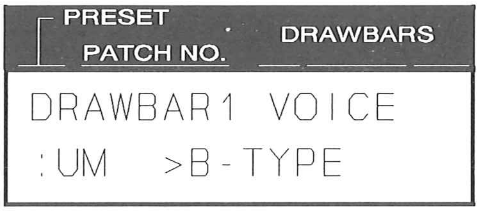
1. Touch the EDIT Touch Button "ON" (red LED lit).


SHIFT
>
ON/+
OFF/-
VIBRATO TUNE
PERCUSSION FOOT SW
DRAWBAR SPLIT
MIDI EFFECT
PRESET RESET
RECORD
EDIT
CANCEL
1
2
3
4
5
6
7
8

2. Touch the black number 6 [DRAWBAR/SPLIT] Touch Button <u>once</u>.

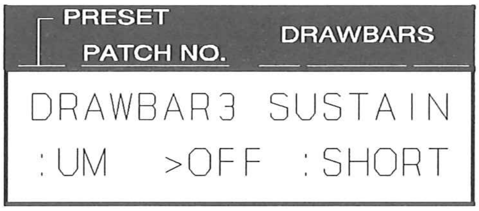

SHIFT
>
ON/+
OFF/-
VIBRATO TUNE
PERCUSSION FOOT SW
DRAWBAR SPLIT
MIDI EFFECT
PRESET RESET
RECORD
EDIT
CANCEL
1
2
3
4
5
6
8

The Information Center Display should show the following:


PRESET
PATCH NO.
DRAWBARS

```
DRAWBAR1 VOICE
:UM   >B-TYPE
```

3. Touch the gray SHIFT Touch Button <u>twice</u>. The Information Center Display should show the following:


PRESET
PATCH NO.
DRAWBARS

```
DRAWBAR3 SUSTAIN
:UM   >OFF  :SHORT
```

3. Now select the Sustain setting for each Manual by doing the following:

   Use the black number 1 [>] Select Touch Button to move the Prompter Mark [>] between Manual selections, "ON / OFF" selections and Sustain Length selections.

   Use the black number 2 [ON/+] and the number 3 [OFF/-] Touch Buttons to select the Manual and Drawbar Sustain Length.

The data chart below shows the options you may select for Upper Manual (right of split) and Lower Manual (left of split).

DRAWBAR SUSTAIN OPTIONS
ON / OFF
*SHORT
MID
LONG

*default setting

This data CAN be stored to a Patch. This means that each Patch can store a different Sustain setting. To see a total listing of all parameters that can be saved to a Patch, see the Parameter Data Table on page 101.

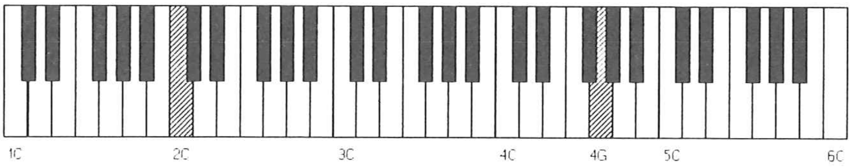
NOTE: You will not hear any change while in "LM" Menu Page unless you have the Keyboard Split "ON". See page 61 for more information about the Keyboard Split Advanced Feature.

To EXIT this menu, simply touch the EDIT Touch Button.

DRAWBAR4 - Drawbar Fold Back = EDIT + 6 + SHIFT + SHIFT + SHIFT

There are two function selections to this Advanced Features Menu Page: (1) To select how low the Sub-Fundamental (16') Drawbar will play on the keyboard, and (2) To select how high the 8th Harmonic (1') Drawbar will play up the keyboard.

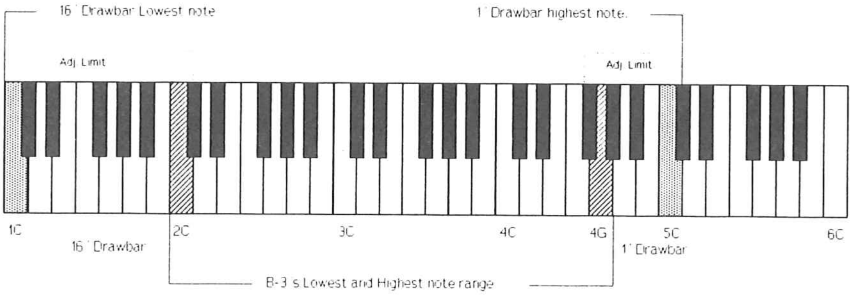
The default settings for both the Sub-Fundamental and 8th harmonic Drawbars are the same as the original B-3.


1C
2C
3C
4C
4G
5C
6C

The Sub-Fundamental Drawbar stops at the 2nd "C" ("2C") from the left. The 1st "B" ("1B") down to the lowest "C" ("1C") repeat or "Fold Back" the same octave as the 2nd B ("2B") down to the 2nd C (2C).

The highest note that can be played by the 8th harmonic Drawbar is 4th "F♯" ("4F♯") from the left end of the keyboard. When the 8th harmonic Drawbar is used, you will hear the notes of the keyboard above "4F♯" repeat or "Fold Back" the notes of the next lower octave.

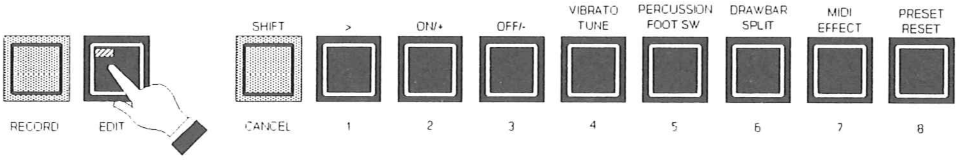
On some earlier model Hammond Organs, such as the original model A, the Sub-Fundamental Drawbar would continue to play all the way down to the lowest C ("1C"). Newer models such as the Hammond Models X-66, X-77, Concorde, SX and CX Series do the same, and in addition, the 8th harmonic Drawbar continues to play up the keyboard to the next to the highest C ("5C") on the keyboard.


16' Drawbar Lowest note
1' Drawbar highest note.
Adj. Limit
Adj. Limit
1C
16' Drawbar
2C
3C
4C
4G
5C
1' Drawbar
6C
B-3's Lowest and Highest note range

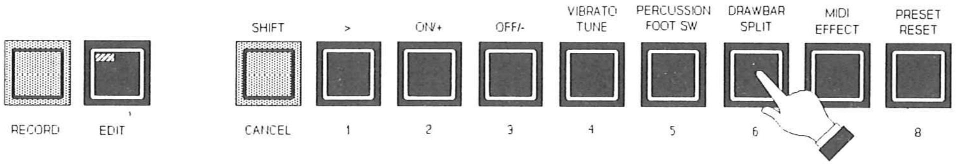
The XB-2 allows you to customize how low the Sub-Fundamental Drawbar will play and how high the 8th harmonic Drawbar will play on the keyboard.

To access the DRAWBAR4 Menu Page, do the following:

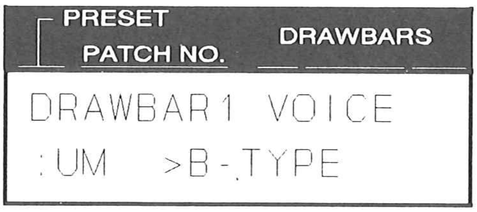
1. Touch the EDIT Touch Button "ON" (red LED lit).


SHIFT
>
ON/+
OFF/-
VIBRATO TUNE
PERCUSSION FOOT SW
DRAWBAR SPLIT
MIDI EFFECT
PRESET RESET
RECORD
EDIT
CANCEL
1
2
3
4
5
6
7
8

2. Touch the black number 6 [DRAWBAR/SPLIT] Touch Button once.

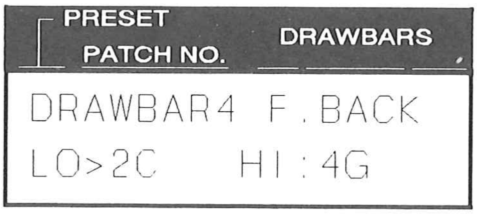

SHIFT
>
ON/+
OFF/-
VIBRATO TUNE
PERCUSSION FOOT SW
DRAWBAR SPLIT
MIDI EFFECT
PRESET RESET
RECORD
EDIT
CANCEL
1
2
3
4
5
6
8

The Information Center Display should show the following:


PRESET
PATCH NO.
DRAWBARS

```
DRAWBAR1 VOICE
:UM    >B-TYPE
```

3. Touch the gray SHIFT Touch Button three times. The Information Center Display should show the following:


PRESET
PATCH NO.
DRAWBARS

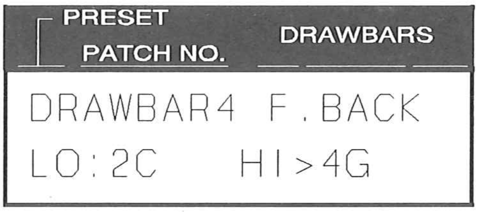
```
DRAWBAR4 F.BACK
LO>2C    HI:4G
```

The default setting for the Sub-Fundamental Drawbar is "2C" and the default setting for the 8th harmonic Drawbar is "4G". The Prompter Mark [>] should be between the word "LO" and the letters "2C".

Touch and hold the black number 3 [OFF/-] Touch Button and the letters "2C" will scroll down to "1C" which is the lowest note that the XB-2 will play.

Touch and hold the black number 2 [ON/+] and the letters "1C" will scroll up stopping at "2C" which is the Sub-Fundamental Drawbar's upper limit.

4. Touch the black number 1 [>] Touch Button so the Information Center Display shows the following:



```
DRAWBAR4 F.BACK
LO:2C    HI>4G
```

The Prompter Mark [>] should move between the word "HI" and the letters "4G".

The default setting for the 8th harmonic Drawbar is "4G".

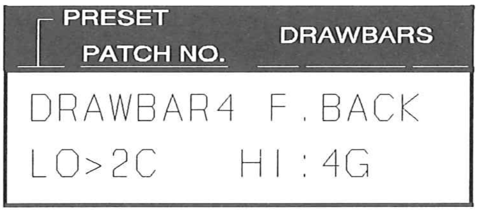
Touch and hold the black number 2 [ON/+] Touch Button and the letters "4G" will scroll up to "5C" which is the highest note that the XB-2 will play.

Touch and hold the black number 3 [OFF/-] Touch Button and the letters "5C" will scroll down stopping at "4G" which is the 8th harmonic Drawbar's lower limit.

You can also change the Drawbar Foldback point by key input.

TRY THIS:

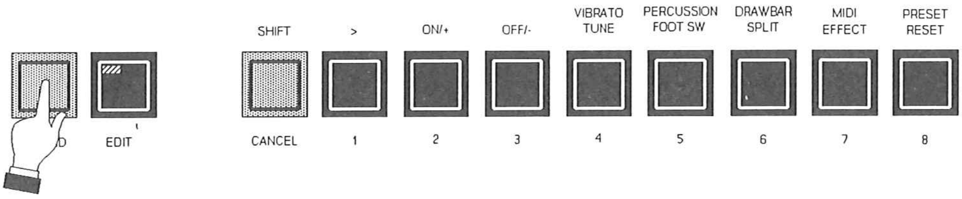
1. Touch the black number 1 [>] Touch Button so the Information Center Display shows the following:



```
DRAWBAR4 F.BACK
LO>2C    HI:4G
```

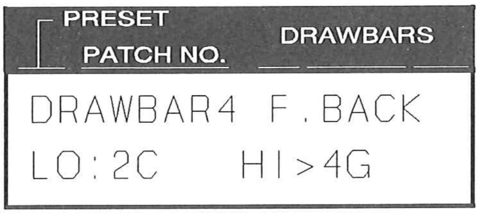
The Prompter Mark [>] should be between the word "LO" and the letters "2C".

2. To change the Sub-Fundamental Drawbar Fold Back point, use your left hand and touch and hold the gray RECORD Touch Button.


SHIFT
>
ON/+
OFF/-
VIBRATO TUNE
PERCUSSION FOOT SW
DRAWBAR SPLIT
MIDI EFFECT
PRESET RESET
D
EDIT
CANCEL
1
2
3
4
5
6
7
8

3. While still holding the RECORD Touch Button, with your right hand touch the key at which you wish to set the Fold Back Point. Remember, you are limited to only the keys between the first "C" and the second "C" of the keyboard, "1C-2C". Release the gray RECORD Touch Button when you have set the Sub-Fundamental Drawbar Fold Back point.

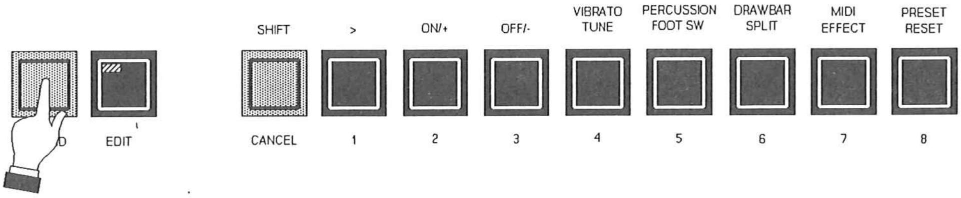
4. Touch the black number 1 [>] Touch Button so the Information Center Display shows the following:


PRESET
PATCH NO.
DRAWBARS

```
DRAWBAR4 F.BACK
LO:2C    HI>4G
```

The Prompter Mark [>] should move between the word "HI" and the letters "4G".

5. To change the 8th harmonic Drawbar Fold Back point, use your left hand and touch and hold the gray RECORD Touch Button.


SHIFT
>
ON/+
OFF/-
VIBRATO TUNE
PERCUSSION FOOT SW
DRAWBAR SPLIT
MIDI EFFECT
PRESET RESET
D
EDIT
CANCEL
1
2
3
4
5
6
7
8

3. While still holding the RECORD Touch Button, with your right hand, touch the key at which you wish to set the Fold Back Point. Remember, you are limited to only the keys between the fourth "G" and the fifth "C" of the keyboard, "4G-5C". Release the gray RECORD Touch Button when you have set the 8th harmonic Drawbar Fold Back point.

The data chart below shows the options that you may select. The default settings are the same as the Hammond Models B-3, C-3, RT-3, and A-100: Sub-Fundamental Drawbar at "C2" and the 8th harmonic Drawbar at "4G".

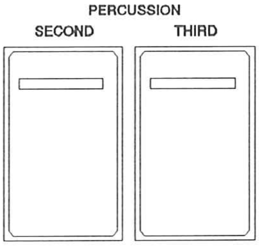
DRAWBAR FOLD BACK OPTIONS	
Sub-Fundamental range	**8th harmonic range**
1C-2C	4G-5C

This data CAN be stored to a Patch. This means that each Patch can store a different Drawbar Fold Back setting. To see a total listing of all parameters that can be saved to a Patch, see the Parameter Data Table on page 101.

NOTE: Changing the Fold Back affects both Upper Manual (right of split) and Lower Manual (left of split) at the same time.

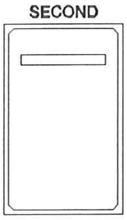
To EXIT this menu, simply touch the EDIT Touch Button.

Percussion



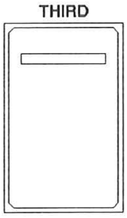
The Percussion controls consist of two separate Touch Tabs and five EDIT choices.

Second Harmonic



The tone for this harmonic is the same as the sound derived from the 4' Drawbar. Combining this 2nd harmonic with the Drawbars will produce bright and clear sounds.

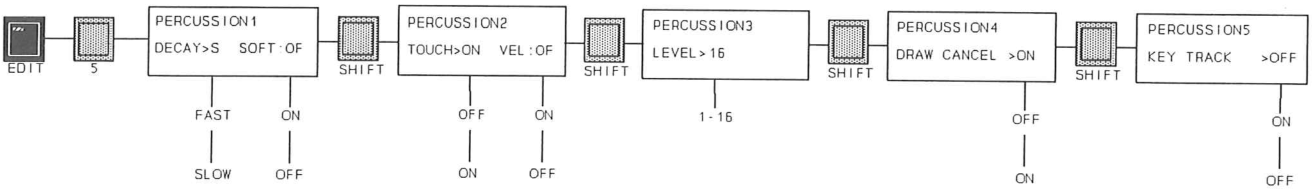
Third Harmonic



This harmonic tone is the same one produced by the 2 2/3' Drawbar. Combining this 3rd harmonic with the Drawbars will produce powerful and heavy sounds.

NOTE: The EDIT choices referred to above are explained starting on page 49 of this Owner's Guide.

➤ Advanced Features - Percussion


EDIT
5
PERCUSSION1
DECAY>S SOFT:OF
FAST
SLOW
ON
OFF
SHIFT
PERCUSSION2
TOUCH>ON VEL:OF
OFF
ON
ON
OFF
SHIFT
PERCUSSION3
LEVEL>16
1-16
SHIFT
PERCUSSION4
DRAW CANCEL >ON
OFF
ON
SHIFT
PERCUSSION5
KEY TRACK >OFF
ON
OFF

These Advanced Feature Menus allow you to make the following changes to the XB-2's Percussion:

1. Percussion - Decay & Soft
   Allows you to select two options: (1) Decay amount, Slow or Fast, (2) Turning Soft Volume "ON" or "OFF".

2. Percussion - Touch & Velocity Sensitivity
   Allows you to select two options for the Percussion: (1) The type of Touch, "touch-response" (single) or "multi" (multi-trigger), (2) Turning "ON" or "OFF" Percussion Velocity Sensitivity.

3. Percussion Level -
   Allows you to select the overall level of the Percussion.

4. Percussion Drawbar Cancel -
   Allows you to select whether or not the 8th harmonic Drawbar will cancel when using Percussion.

5. Percussion Key Tracking -
   Allows you to select whether or not the Percussion tones will decrease in volume slightly on higher notes.

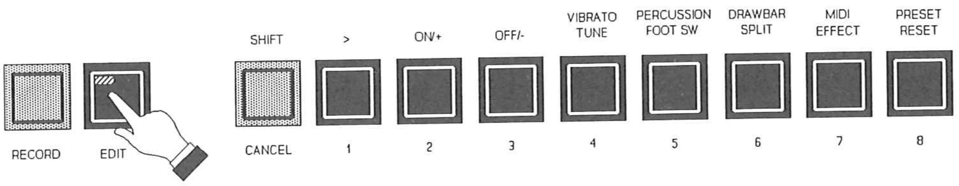
The following pages give a more detailed explanation of how these Advanced Feature Menus work.

PERCUSSION1 - Percussion Decay & Soft = EDIT + 5

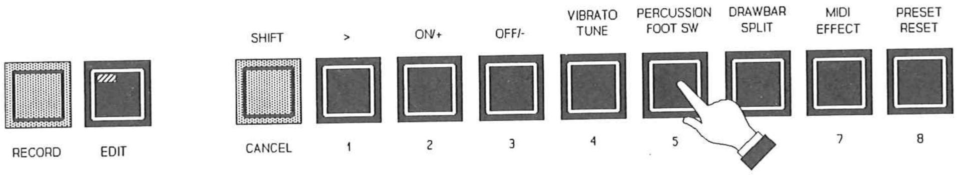
There are two function selections to this Advanced Feature Menu Page: (1) To change the Percussion Decay (the rate at which the Percussion tone dies away after the key is pressed and held), and (2) To turn Percussion Soft Volume "ON" or "OFF".

To access the PERCUSSION1 Menu Page, do the following:

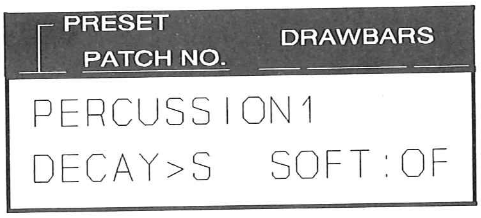
1. Touch the EDIT Touch Button "ON" (red LED lit).


SHIFT
>
ON/+
OFF/-
VIBRATO TUNE
PERCUSSION FOOT SW
DRAWBAR SPLIT
MIDI EFFECT
PRESET RESET
RECORD
EDIT
CANCEL
1
2
3
4
5
6
7
8

2. Touch the black number 5 [PERCUSSION/FOOT SW] Touch Button once.


SHIFT
>
ON/+
OFF/-
VIBRATO TUNE
PERCUSSION FOOT SW
DRAWBAR SPLIT
MIDI EFFECT
PRESET RESET
RECORD
EDIT
CANCEL
1
2
3
4
5
7
8

The Information Center Display should show the following:


PRESET
PATCH NO.
DRAWBARS

PERCUSSION1
DECAY>S SOFT:OF

3. Now select the options you wish by doing the following:

   Use the black number 1 [>] Select Touch Button to move the Prompter Mark [>] between "DECAY" and "SOFT".

   Use the black number 2 [ON/+] and the number 3 [OFF/-] Touch Buttons to select "S" (slow) or "F" (fast) Decay, or to turn Percussion Volume Soft "ON" or "OFF".

This data CAN be stored to a Patch. To see a total listing of all parameters that can be saved to the Presets, see the Parameter Data Table on page 101.

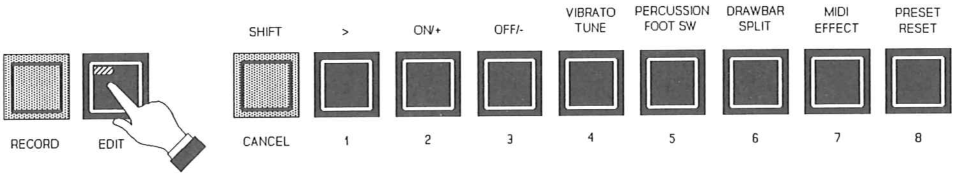
To EXIT this menu, simply touch the EDIT Touch Button.

PERCUSSION2 - Percussion Touch and Velocity = EDIT + 5 + SHIFT

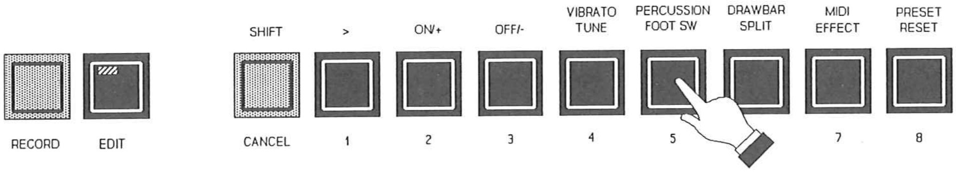
There are two function selections to this Advanced Feature Menu Page: (1) To select the type of touch of the Percussion, and (2) To turn "ON" or "OFF" Percussion Velocity Sensitivity.

To access the PERCUSSION2 Menu Page, do the following:

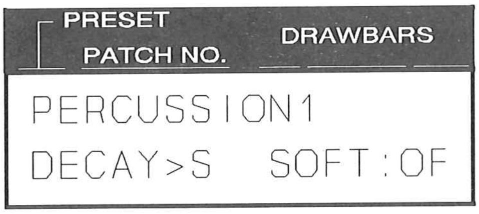
1. Touch the EDIT Touch Button "ON" (red LED lit).


SHIFT
>
ON/+
OFF/-
VIBRATO TUNE
PERCUSSION FOOT SW
DRAWBAR SPLIT
MIDI EFFECT
PRESET RESET
RECORD
EDIT
CANCEL
1
2
3
4
5
6
7
8

2. Touch the black number 5 [PERCUSSION/FOOT SW] Touch Button once.

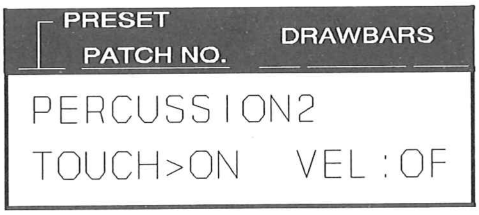

SHIFT
>
ON/+
OFF/-
VIBRATO TUNE
PERCUSSION FOOT SW
DRAWBAR SPLIT
MIDI EFFECT
PRESET RESET
RECORD
EDIT
CANCEL
1
2
3
4
5
7
8

The Information Center Display should show the following:


PRESET
PATCH NO.
DRAWBARS

```
PERCUSSION1
DECAY>S   SOFT:OF
```

3. Touch the gray SHIFT Touch Button once. The Information Center Display should show the following:


PRESET
PATCH NO.
DRAWBARS

```
PERCUSSION2
TOUCH>ON   VEL:OF
```

4. Now select the option you wish by doing the following:

   Use the black number 1 [>] Select Touch Button to move the Prompter Mark [>] between "TOUCH" and "VEL" (velocity).

   Use the black number 2 [ON/+] and the number 3 [OFF/-] Touch Buttons to turn Percussion Touch or Velocity "ON" or "OFF".

The data chart below explains how this Advanced Feature functions.

PERCUSSION TOUCH AND VELOCITY DATA CHART	
***Percussion Touch**	When Percussion Touch is "ON", the keys must be played in a detached (non-Legato) manner to hear the Percussion tones. If you play a single note and then hold it down while playing other keys, the Percussion tones will not play again until you release all keys and again play detached notes. When Percussion Touch is "OFF", if you press and hold keys and hold them down while playing other keys, the Percussion tones will play.
+Percussion Velocity	When Percussion Velocity is "ON", the loudness of the Percussion tones is determined by the speed with which the keys are pressed similar to a piano. When Percussion Velocity is "OFF", the Percussion tones sound normally, at one volume level.

*default setting is "ON".
+default setting is "OFF".

This data CAN be stored to a Patch. To see a total listing of all parameters that can be saved to the Presets, see the Parameter Data Table on page 101.

To EXIT this menu, simply touch the EDIT Touch Button.

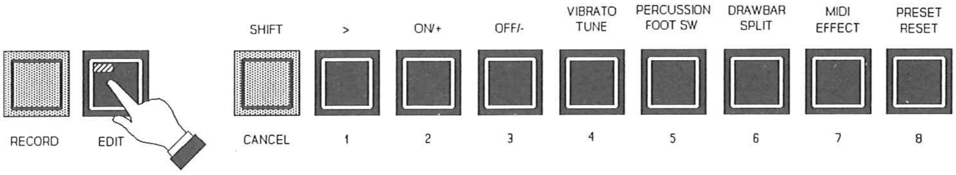
NOTE: If a MIDI device such as a Sound Module or Synthesizer is connected to the XB-2 and Percussion Velocity is turned "ON" or "OFF", it does not affect MIDI touch and/or velocity sensitivity data being transmitted. To change MIDI Touch and/or Velocity Sensitivity, see page 154.

PERCUSSION3 - Percussion Level = EDIT + 5 + SHIFT + SHIFT

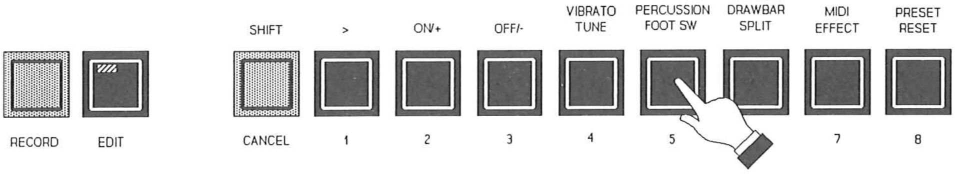
This Advanced Feature allows you to set the overall volume level of the Percussion tones. This will allow you to balance the amount of "normal" and "soft" Percussion sound (the choices provided by the Touch Tabs) with the sound produced by the Drawbars.

To access the PERCUSSION3 Menu Page, do the following:

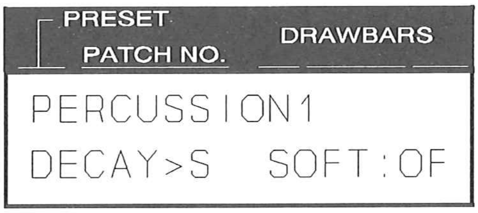
1. Touch the EDIT Touch Button "ON" (red LED lit).


SHIFT
>
ON/+
OFF/-
VIBRATO TUNE
PERCUSSION FOOT SW
DRAWBAR SPLIT
MIDI EFFECT
PRESET RESET
RECORD
EDIT
CANCEL
1
2
3
4
5
6
7
8

2. Touch the black number 5 [PERCUSSION/FOOT SW] Touch Button once.

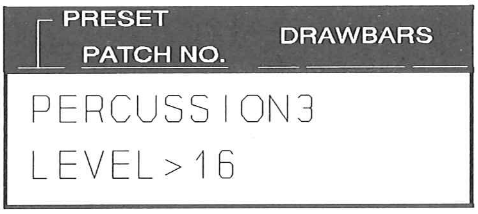

SHIFT
>
ON/+
OFF/-
VIBRATO TUNE
PERCUSSION FOOT SW
DRAWBAR SPLIT
MIDI EFFECT
PRESET RESET
RECORD
EDIT
CANCEL
1
2
3
4
5
7
8

The Information Center Display should show the following:


PRESET
PATCH NO.
DRAWBARS

PERCUSSION1
DECAY>S SOFT:OF

3. Touch the gray SHIFT Touch Button twice. The Information Center Display should show the following:


PRESET
PATCH NO.
DRAWBARS

PERCUSSION3
LEVEL>16

4. The default setting is "16". Now select the Percussion Level you wish by doing the following:

Use the black number 2 [ON/+] Touch Button to scroll up through the Percussion Level selections.

Use the black number 3 [OFF/-] Touch Button to scroll down through the Percussion Level selections.

The data chart below shows the options that you may select.

PERCUSSION LEVEL OPTIONS
1 ˜ 16

default setting is "16".

This data CAN be stored to a Patch. This means that each Patch can store a different Percussion Volume level. To see a total listing of all parameters that can be saved to a Patch, see the Parameter Data Table on page 101.

To EXIT this menu, simply touch the EDIT Touch Button.

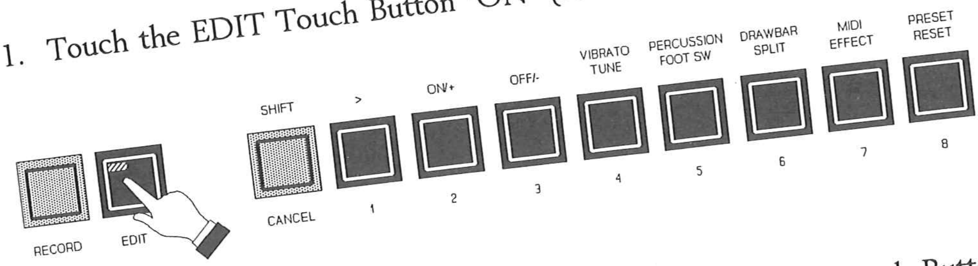
PERCUSSION4 - Percussion Drawbar Cancel = EDIT + 5 + SHIFT + SHIFT + SHIFT

On the original Hammond Organs with Touch-Response Percussion, such as the B-3, C-3 and RT-3, when the Upper Manual "B" Preset Key is engaged, and Percussion is "ON", the sound produced by the 8th harmonic (1') Drawbar is canceled. However, some pros would re-wire the organ so that the 8th harmonic Drawbar would continue to play while Percussion is "ON".

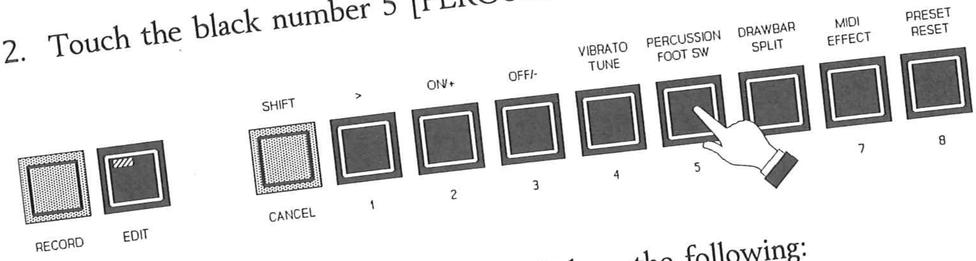
The Percussion Drawbar Cancel Advanced Feature allows you to select whether the 8th harmonic Drawbar will continue to sound when Percussion is turned "ON".

To access the PERCUSSION4 Menu Page, do the following:

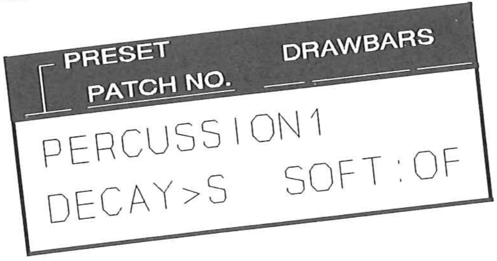
1. Touch the EDIT Touch Button "ON" (red LED lit).


RECORD
EDIT
SHIFT
CANCEL
>
1
ON/+
2
OFF/-
3
VIBRATO TUNE
4
PERCUSSION FOOT SW
5
DRAWBAR SPLIT
6
MIDI EFFECT
7
PRESET RESET
8

2. Touch the black number 5 [PERCUSSION/FOOT SW] Touch Button once.

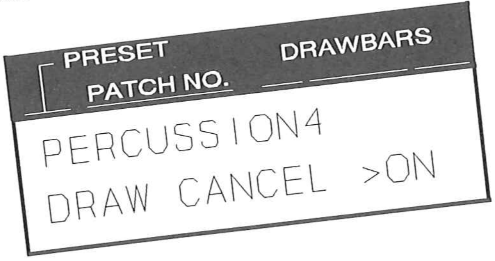

RECORD
EDIT
SHIFT
CANCEL
>
1
ON/+
2
OFF/-
3
VIBRATO TUNE
4
PERCUSSION FOOT SW
5
DRAWBAR SPLIT
7
MIDI EFFECT
PRESET RESET
8

The Information Center Display should show the following:


PRESET
PATCH NO.
DRAWBARS

PERCUSSION1
DECAY>S SOFT:OF

3. Touch the gray SHIFT Touch Button three times. The Information Center Disp should show the following:


PRESET
PATCH NO.
DRAWBARS

PERCUSSION4
DRAW CANCEL >ON

4. The default setting is "ON". To turn Percussion Drawbar Cancel "OFF", Touch either the black number 2 [ON/+] or number 3 [OFF/-] Touch Button. The 1' Drawbar will sound while Percussion is "ON".

5. To turn it back "ON", Touch either the black number 2 [ON/+] or number 3 [OFF/-] Touch Buttons again. The 1' Drawbar will be canceled when Percussion is "ON".

This data CAN be stored to a Patch. This means that each Patch can store a different setting. To see a total listing of all parameters that can be saved to a Patch, see the Parameter Data Table on page 101.

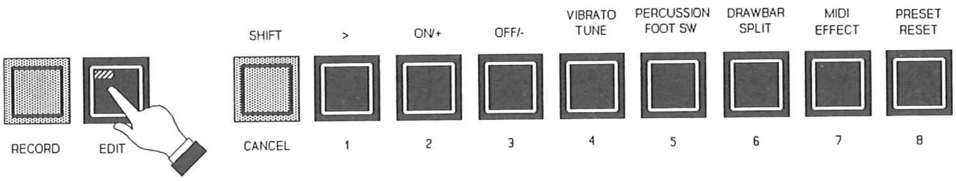
To EXIT this menu, simply touch the EDIT Touch Button.

PERCUSSION5 - Percussion Key Tracking = EDIT + 5 + SHIFT + SHIFT + SHIFT + SHIFT

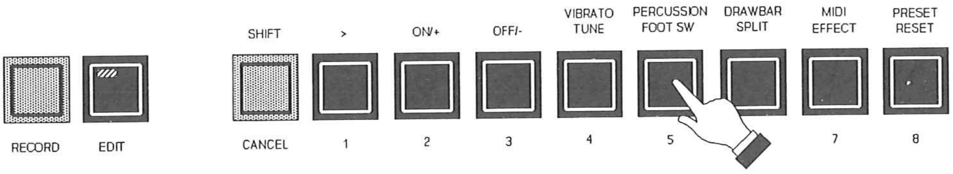
On the original Hammond Organs with Touch-Response Percussion, such as the B-3, C-3 and RT-3, the Percussion sounds would taper off slightly at higher frequencies. The Percussion Key Tracking Advanced Feature, when turned "ON", is designed to replicate this characteristic of the Percussion.

To access the PERCUSSION5 Menu Page, do the following:

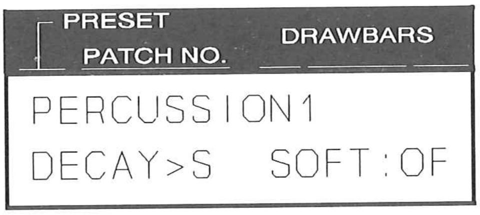
1. Touch the EDIT Touch Button "ON" (red LED lit).


SHIFT
>
ON/+
OFF/-
VIBRATO TUNE
PERCUSSION FOOT SW
DRAWBAR SPLIT
MIDI EFFECT
PRESET RESET
RECORD
EDIT
CANCEL
1
2
3
4
5
6
7
8

2. Touch the black number 5 [PERCUSSION/FOOT SW] Touch Button once.

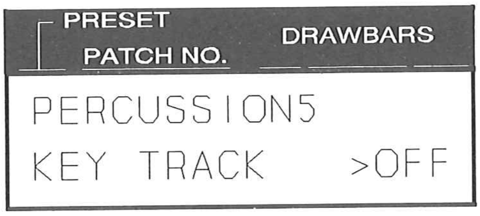

SHIFT
>
ON/+
OFF/-
VIBRATO TUNE
PERCUSSION FOOT SW
DRAWBAR SPLIT
MIDI EFFECT
PRESET RESET
RECORD
EDIT
CANCEL
1
2
3
4
5
7
8

The Information Center Display should show the following:


PRESET
PATCH NO.
DRAWBARS

PERCUSSION1
DECAY>S SOFT:OF

3. Touch the gray SHIFT Touch Button four times. The Information Center Display should show the following:


PRESET
PATCH NO.
DRAWBARS

PERCUSSION5
KEY TRACK >OFF

4. The default setting is "OFF". To turn Percussion Key Tracking "ON", Touch either the black number 2 [ON/+] or number 3 [OFF/-] Touch Button.

5. To turn it back "OFF", Touch either the black number 2 [ON/+] or number 3 [OFF/-] Touch Buttons again.

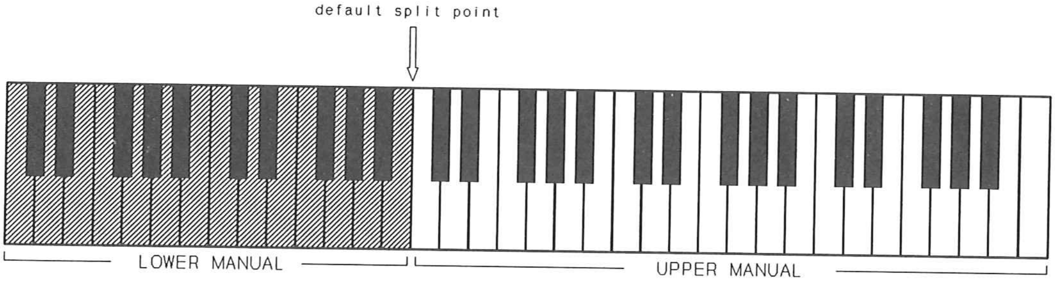
This data CAN be stored to a Patch. This means that each Patch can store a different setting. To see a total listing of all parameters that can be saved to a Patch, see the Parameter Data Table on page 101.

To EXIT this menu, simply touch the EDIT Touch Button.

Keyboard
Split

KEYBOARD SPLIT

Although the XB-2 has a single manual, the keyboard can be Split so that one sound can be played on one part of the keyboard and a different sound can be played on another part of the keyboard.

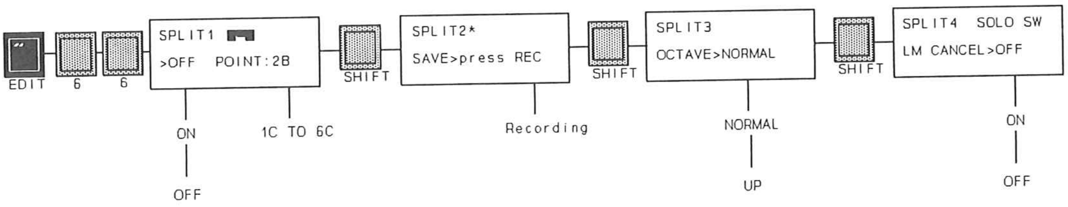


➤ Upper and Lower Manuals on the XB-2

When the keyboard is split on the XB-2, the effect is that of a conventional two-manual organ on which the Upper Manual would be played by the right hand and the Lower Manual is played by the left hand. Therefore, when Keyboard Split is "ON", the area on the keyboard to the right of the Split Point is referred to on the XB-2 as the Upper Manual, while the area on the keyboard to the left of the Split Point is referred to as the Lower Manual. In the Information Center Display you will see these referred to as "UM" and "LM".

If you are making any changes to parameters affecting the Lower Manual, such as Vibrato On, you will not hear any change unless Keyboard Split is "ON". The following pages will explain how to turn Keyboard Split "ON" as well as other Advanced Features pertaining to Keyboard Split.

➤ Advanced Features - Split


EDIT
6
6
SPLIT1
>OFF POINT:2B
ON
OFF
1C TO 6C
SHIFT
SPLIT2*
SAVE>press REC
Recording
SHIFT
SPLIT3
OCTAVE>NORMAL
NORMAL
UP
SHIFT
SPLIT4 SOLO SW
LM CANCEL>OFF
ON
OFF

These Advanced Feature Menus allow you to make the following changes to the XB-2:

1. Split "ON" & Split Point -
   Allows you to turn Keyboard Split "ON" and "OFF" and select the Split Point on the keyboard.

2. Split Drawbar Save -
   Allows you to save your own Drawbar combination to play to the left of the Split Point when Split is "ON".

3. Split Octave -
   Allows you to select in which octave the tones to the left of the Split Point sound..

4. Split Lower Manual Cancel -
   Allows you to change the function of the ORGAN SOLO Touch Tab to silence the XB-2's internal sounds to the left of the Split Point only.

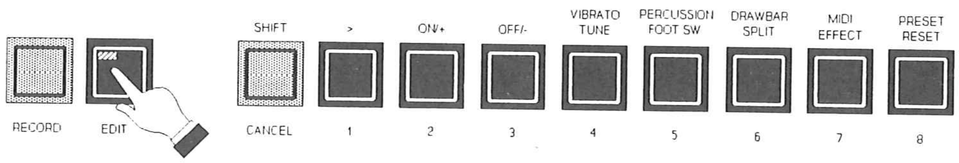
The following pages give a more detailed explanation of how these Advanced Feature Menus work.

SPLIT1 - Split "ON" & Split Point = EDIT + 6 + 6

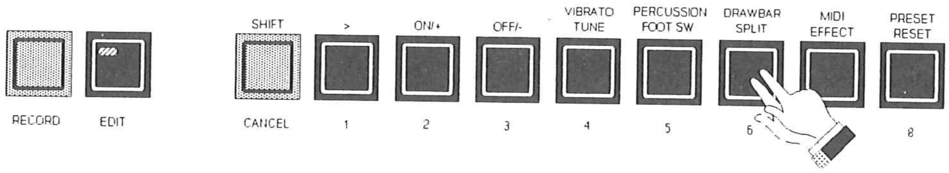
This Menu Page has two functions: (1) To turn "ON" or "OFF" the Keyboard Split and (2) to set the Split POINT at which the keyboard splits between Upper Manual (right of split) and Lower Manual (left of split).

To access the SPLIT1 Menu Page, do the following:

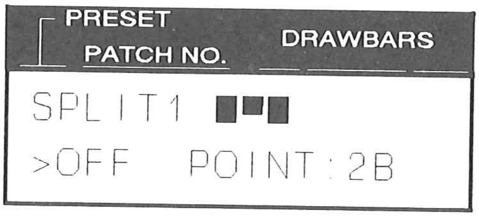
1. Touch the EDIT Touch Button "ON" (red LED lit).


SHIFT
>
ON/+
OFF/-
VIBRATO TUNE
PERCUSSION FOOT SW
DRAWBAR SPLIT
MIDI EFFECT
PRESET RESET
RECORD
EDIT
CANCEL
1
2
3
4
5
6
7
8

2. Touch the black number 6 [DRAWBAR/SPLIT] Touch Button twice.


SHIFT
>
ON/+
OFF/-
VIBRATO TUNE
PERCUSSION FOOT SW
DRAWBAR SPLIT
MIDI EFFECT
PRESET RESET
RECORD
EDIT
CANCEL
1
2
3
4
5
6
8

The Information Center Display should show the following:


PRESET
PATCH NO.
DRAWBARS

```
SPLIT1 ■■■
>OFF   POINT:2B
```

4. Now select the Split "ON / OFF" and Split Point options by doing the following:

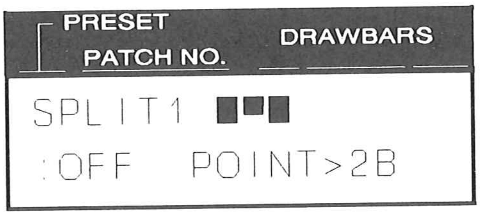
   Use the black number 1 [>] Select Touch Button to move the Prompter Mark [>] between the Split "ON / OFF" selection and the Split Point selection.

   Use the black number 2 [ON/+] and the number 3 [OFF/-] Touch Buttons to turn Split "ON" or "OFF" or to change the Split Point.

You can also change the Split Point by key input.

TRY THIS:

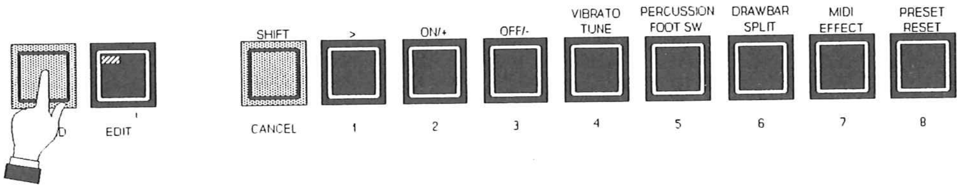
1. Touch the black number 1 [>] Touch Button so the Information Center Display shows the following:


PRESET
PATCH NO.
DRAWBARS

```
SPLIT1 ■■■
:OFF   POINT>2B
```

The Prompter Mark [>] should move between "POINT" and "2B".

2. Use your left hand and touch and hold the gray RECORD Touch Button.


D
EDIT
SHIFT
CANCEL
>
1
ON/+
2
OFF/-
3
VIBRATO TUNE
4
PERCUSSION FOOT SW
5
DRAWBAR SPLIT
6
MIDI EFFECT
7
PRESET RESET
8

3. While still holding the RECORD Touch Button, with your right hand touch the key at which you wish to set the Split Point. Release the gray RECORD Touch Button when you have set the Split Point. The Information Center Display will now display the new Split Point.

The data chart below explains how this Advanced Feature functions.

SPLIT LM CANCEL DATA CHART	
***Split "OFF"**	The XB-2 functions as a single-manual instrument. The Drawbars change the sound of the entire keyboard.
Split "ON"	The XB-2 functions as a two-manual organ. The Drawbars control the sound of the Upper Manual (right of split) and a fixed Drawbar setting plays on the Lower Manual (left of split).
+Split Point Options	1C ~ 6C

*default setting
+default setting is "2B".

NOTE: The Drawbar setting on the Lower Manual (left of split) can be changed using the SPLIT2 (Split Drawbar Save) Advanced Feature. This is explained starting on the next page.

NOTE: Split "ON" or "OFF" can be used at any time even if a Preset is being used.

Different SPLIT points CAN be stored to a Patch. This means that each Patch can store a different Split Point setting. To see a total listing of all parameters that can be saved to a Patch, see the Parameter Data Table on page 101.

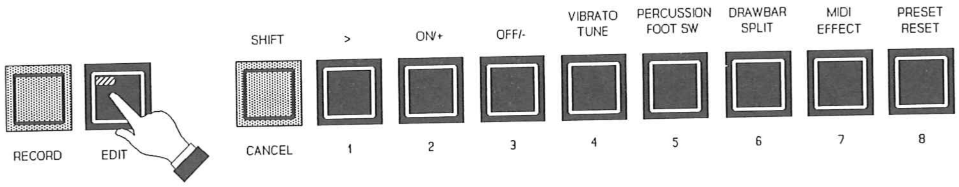
To EXIT this menu, simply touch the EDIT Touch Button.

SPLIT2 - Split Drawbar Save = EDIT + 6 + 6 + SHIFT

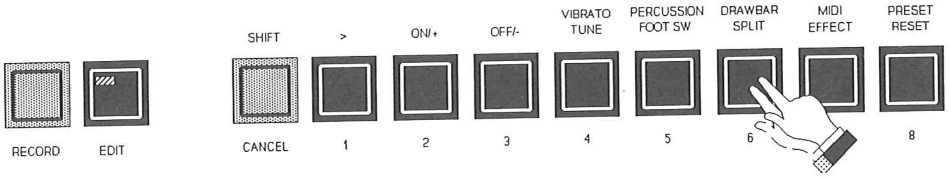
This Menu Page has one function: to save a Drawbar registration for the Lower Manual (left of split).

To access the SPLIT2 Menu Page, do the following:

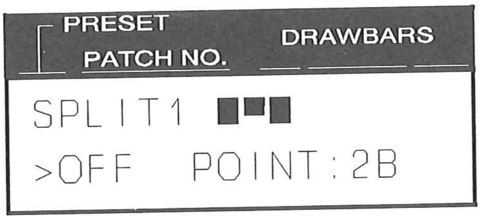
1. Touch the EDIT Touch Button "ON" (red LED lit).


SHIFT
>
ON/+
OFF/-
VIBRATO TUNE
PERCUSSION FOOT SW
DRAWBAR SPLIT
MIDI EFFECT
PRESET RESET
RECORD
EDIT
CANCEL
1
2
3
4
5
6
7
8

2. Touch the black number 6 [DRAWBAR/SPLIT] Touch Button <u>twice</u>.

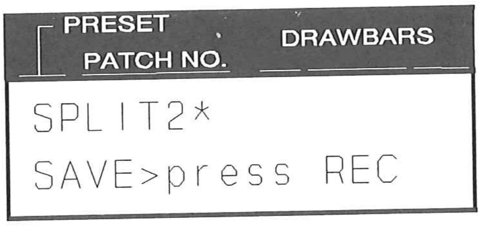

SHIFT
>
ON/+
OFF/-
VIBRATO TUNE
PERCUSSION FOOT SW
DRAWBAR SPLIT
MIDI EFFECT
PRESET RESET
RECORD
EDIT
CANCEL
1
2
3
4
5
6
8

The Information Center Display should show the following:


PRESET
PATCH NO.
DRAWBARS

```
SPLIT1 ■■■
>OFF   POINT:2B
```

3. Touch the gray SHIFT Touch Button <u>once</u>. The Information Center Display should show the following:

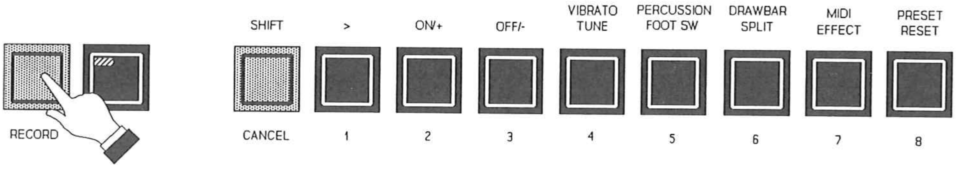

PRESET
PATCH NO.
DRAWBARS

```
SPLIT2*
SAVE>press REC
```

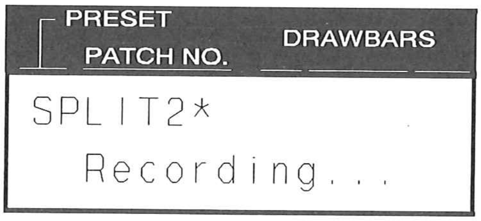
The current and/or default setting for the Lower Manual (left of split) Drawbars will be shown in the upper left hand corner of the Information Center Display.

Simply adjust the Drawbars to create a Drawbar registration of your liking. When you make any Drawbar changes, they will appear in the Information Center Display.

4. To save your new Lower Manual (left of split) Drawbar registration, simply touch the gray RECORD Touch Button.


RECORD
SHIFT
CANCEL
>
1
ON/+
2
OFF/-
3
VIBRATO TUNE
4
PERCUSSION FOOT SW
5
DRAWBAR SPLIT
6
MIDI EFFECT
7
PRESET RESET
8

The Information Center Display should display this for approximately 1 second once the gray RECORD Touch Button has been touched:


PRESET
PATCH NO.
DRAWBARS

SPLIT2*
Recording...

NOTE: To hear the new "LM" (Lower Manual - left of split) Drawbar Registration, make sure Keyboard Split is turned "ON". Also, if a Preset is in use you may edit the Lower Manual Drawbar registration at any time. However, the new registration is not memorized until you record it to the Preset.

This data CAN be stored to a Patch. To see a total listing of all parameters that can be saved to a Patch, see the Parameter Data Table on page 101.

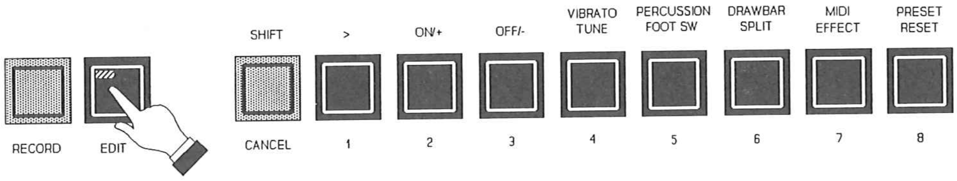
To EXIT this menu, simply touch the EDIT Touch Button.

SPLIT3 - Split Octave Select = EDIT + 6 + 6 + SHIFT + SHIFT

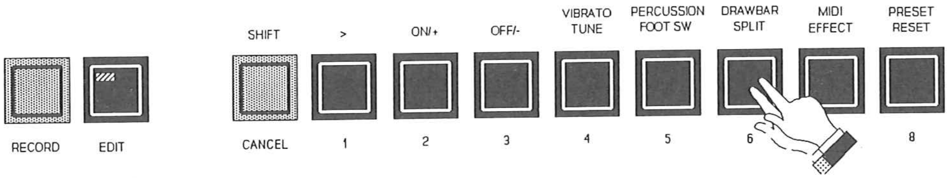
This Menu Page has one function: to raise the Lower Manual (left of split) Drawbar settings an octave. This is so that the Lower Manual can be played like the lower manual of a two-manual organ such as the B-3.

To access the SPLIT3 Menu Page, do the following:

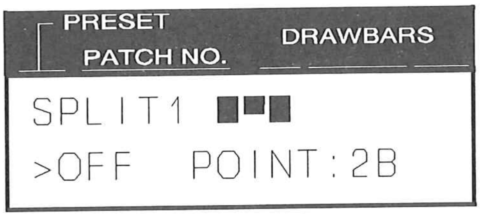
1. Touch the EDIT Touch Button "ON" (red LED lit).


SHIFT
>
ON/+
OFF/-
VIBRATO TUNE
PERCUSSION FOOT SW
DRAWBAR SPLIT
MIDI EFFECT
PRESET RESET
RECORD
EDIT
CANCEL
1
2
3
4
5
6
7
8

2. Touch the black number 6 [DRAWBAR/SPLIT] Touch Button twice.

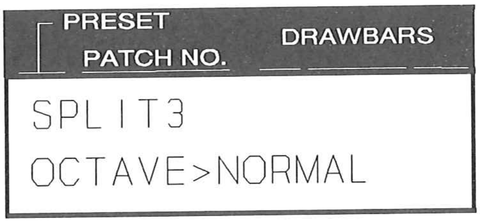

SHIFT
>
ON/+
OFF/-
VIBRATO TUNE
PERCUSSION FOOT SW
DRAWBAR SPLIT
MIDI EFFECT
PRESET RESET
RECORD
EDIT
CANCEL
1
2
3
4
5
6
8

The Information Center Display should show the following:


PRESET
PATCH NO.
DRAWBARS

SPLIT1 ■■■
>OFF POINT:2B

3. Touch the gray SHIFT Touch Button twice. The Information Center Display should show the following:


PRESET
PATCH NO.
DRAWBARS

SPLIT3
OCTAVE>NORMAL

4. Now select the option you wish by doing the following:

    Use the black number 2 [ON/+] and the number 3 [OFF/-] Touch Buttons to select either "NORMAL" or "UP".

The data chart below explains how this Advanced Feature functions.

SPLIT OCTAVE SELECT DATA CHART	
***NORMAL**	The Lower Manual (left of split) plays in the normal octave.
UP	The Lower Manual (left of split) plays an octave higher. This enables the Lower Manual to be played like the lower manual of a two-manual organ such as the B-3.

*default setting

This data CAN be stored to a Patch. To see a total listing of all parameters that can be saved to a Patch, see the Parameter Data Table on page 101.

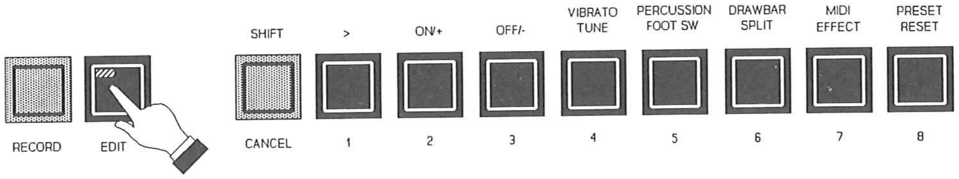
To EXIT this menu, simply touch the EDIT Touch Button.

SPLIT4 - Split LM Cancel = EDIT + 6 + 6 + SHIFT + SHIFT + SHIFT

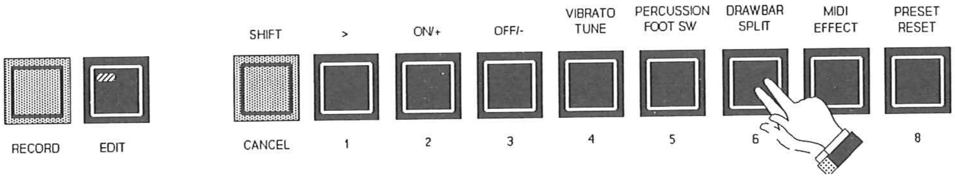
This Menu Page has one function: to allow you to use the ORGAN SOLO Touch Tab to cancel the sound produced by the Drawbars on the "LM" (Lower Manual - left of split) while Keyboard Split is active.

To access the SPLIT4 Menu Page, do the following:

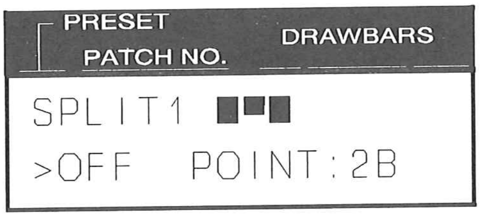
1. Touch the EDIT Touch Button "ON" (red LED lit).


SHIFT
>
ON/+
OFF/-
VIBRATO TUNE
PERCUSSION FOOT SW
DRAWBAR SPLIT
MIDI EFFECT
PRESET RESET
RECORD
EDIT
CANCEL
1
2
3
4
5
6
7
8

2. Touch the black number 6 [DRAWBAR/SPLIT] Touch Button twice.

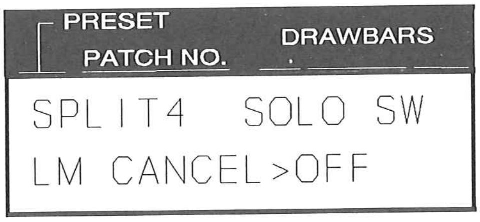

SHIFT
>
ON/+
OFF/-
VIBRATO TUNE
PERCUSSION FOOT SW
DRAWBAR SPLIT
MIDI EFFECT
PRESET RESET
RECORD
EDIT
CANCEL
1
2
3
4
5
6
8

The Information Center Display should show the following:


PRESET
PATCH NO.
DRAWBARS

SPLIT1 ■■■
>OFF POINT:2B

3. Touch the gray SHIFT Touch Button three times. The Information Center Display should show the following:


PRESET
PATCH NO.
DRAWBARS

SPLIT4 SOLO SW
LM CANCEL>OFF

The default setting for the Split LM Cancel is "OFF".

4. Now select the option you wish by doing the following:

   Use the black number 2 [ON/+] and the number 3 [OFF/-] Touch Buttons to turn Split LM Cancel "ON" or "OFF".

The data chart below explains how this Advanced Feature functions.

SPLIT LM CANCEL DATA CHART	
***Split LM Cancel "OFF"**	When the ORGAN SOLO Touch Tab is turned "ON", any instruments connected via MIDI are silenced on both Upper and Lower Manuals - only the XB-2's internal sounds will play.
Split LM Cancel "ON"	When the ORGAN SOLO Touch Tab is turned "ON", the XB-2's Lower Manual internal sounds are silenced while still permitting MIDI transmission from the Lower Manual. The Upper Manual will play the XB-2's internal voices while silencing MIDI transmission from the Upper Manual.

*default setting

This data CAN be stored to a Patch. To see a total listing of all parameters that can be saved to a Patch, see the Parameter Data Table on page 101.

To EXIT this menu, simply touch the EDIT Touch Button.

Hammond XB-2

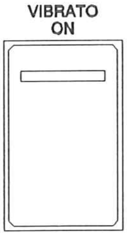
Effects

EFFECTS

The organ has the effects of Vibrato, Chorus, Leslie, Over Drive and Reverb. By adding such effects, you can enhance the sound of your music. On the following pages, each effect is explained in detail.

➤ Vibrato & Chorus

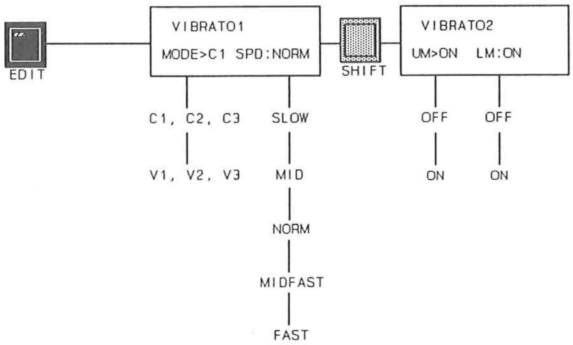
VIBRATO ON Touch Tab



This Touch Tab is used to turn "ON" or "OFF" Vibrato or Chorus. Vibrato and Chorus are used to accent the Drawbars. Simply touch the Vibrato Touch Tab to either turn the Vibrato "ON" (red LED lit) or "OFF" (red LED not lit).

The VIBRATO ON Touch Tab "ON" or "OFF" data CAN be stored to a Patch. This means that each Patch can store a different setting. To see a total listing of all parameters that can be saved to a Patch, see the Parameter Data Table on page 101.

➤ Advanced Features - Vibrato


EDIT
VIBRATO1
MODE>C1 SPD:NORM
C1, C2, C3
V1, V2, V3
SLOW
MID
NORM
MIDFAST
FAST
SHIFT
VIBRATO2
UM>ON LM:ON
OFF
ON
OFF
ON

These Advanced Feature Menus allow you to make the following changes to the XB-2's Vibrato:

1. Vibrato Mode & Speed -
   Allows you to select two options for the Vibrato: (1) Selecting either Vibrato or Chorus, (2) Selecting from 1 of 5 Vibrato/Chorus Speeds.

2. Vibrato Split -
   Allows you to select how the VIBRATO ON Touch Button adds Vibrato to the XB-2.

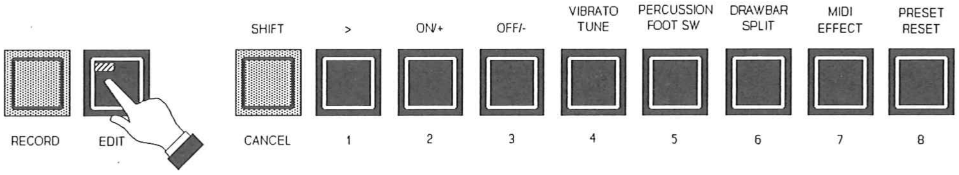
The following pages give a more detailed explanation of how these Advanced Feature Menus work.

VIBRATO1 - Vibrato Mode & Speed = EDIT

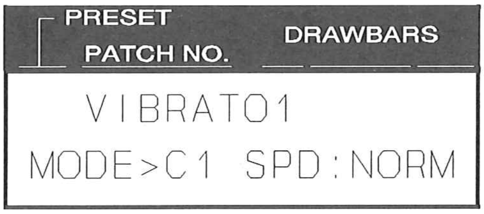
This Menu Page allows you to select the speed for the Vibrato and Chorus that you prefer.

To access the VIBRATO1 Menu Page, do the following:

1. Touch the EDIT Touch Button "ON" (red LED lit).


SHIFT
>
ON/+
OFF/-
VIBRATO TUNE
PERCUSSION FOOT SW
DRAWBAR SPLIT
MIDI EFFECT
PRESET RESET
RECORD
EDIT
CANCEL
1
2
3
4
5
6
7
8

The Information Center Display should show the following:


PRESET
PATCH NO.
DRAWBARS

VIBRATO1
MODE>C1 SPD:NORM

2. Now select the option you wish by doing the following:

   Use the black number 1 [>] Select Touch Button to move the Prompter Mark [>] between Vibrato Mode selections and Vibrato Speed selections.

   Use the black number 2 [ON/+] and the number 3 [OFF/-] Touch Buttons to select the Vibrato Mode or the Vibrato Speed.

The data chart below shows the Vibrato Mode options:

Vibrato Modes	Chorus Modes
V1 - Small Vibrato	C1 - Small Chorus
V2 - Normal Vibrato	C2 - Normal Chorus
V3 - Full Vibrato	C3 - Full Chorus

The data chart below shows the Vibrato Speed options.

VIBRATO SPEED OPTIONS	
Display	**Hz**
SLOW	6.1Hz
MID	6.5Hz
*NORM	6.83Hz
MIDF	7.Hz
FAST	7.25Hz

*default setting

These are Global Commands, and this data CAN NOT be stored to a Preset. To see a total listing of all Global Commands, see the Global Initial Data Table on page 115.

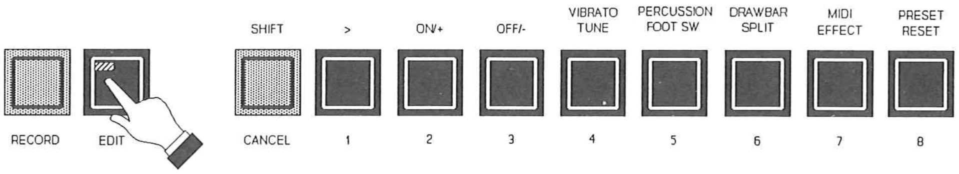
To EXIT this menu, simply touch the EDIT Touch Button.

VIBRATO2 - Vibrato Split = EDIT + SHIFT

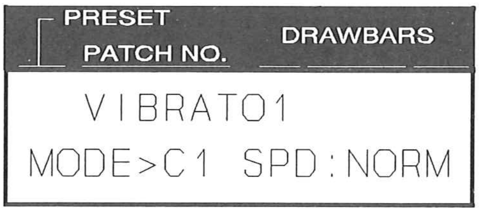
This Advanced Feature allows you to select whether the VIBRATO ON Touch Tab will turn Vibrato "ON" for either "UM" (Upper Manual - right of split), "LM" (Lower Manual - left of split), or both simultaneously.

To access the VIBRATO2 Menu Page, do the following:

1. Touch the EDIT Touch Button "ON" (red LED lit).

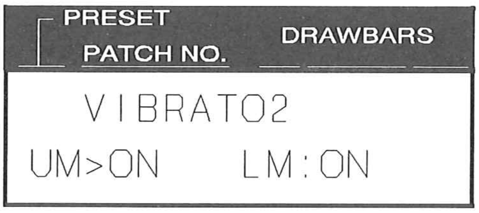

SHIFT
>
ON/+
OFF/-
VIBRATO TUNE
PERCUSSION FOOT SW
DRAWBAR SPLIT
MIDI EFFECT
PRESET RESET
RECORD
EDIT
CANCEL
1
2
3
4
5
6
7
8

The Information Center Display should show the following:


PRESET
PATCH NO.
DRAWBARS

VIBRATO1
MODE>C1 SPD:NORM

2. Touch the gray SHIFT Touch Button once. The Information Center Display should look like this:


PRESET
PATCH NO.
DRAWBARS

VIBRATO2
UM>ON LM:ON

3. Now select the Vibrato Split option by doing the following:

   Use the black number 1 [>] Select Touch Button to move the Prompter Mark [>] between "UM" and "LM".

   Use the black number 2 [ON/+] and the number 3 [OFF/-] Touch Buttons to turn Vibrato "ON" or "OFF" for Upper Manual or Lower Manual.

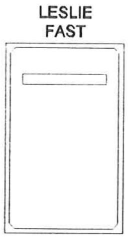
NOTE: You will not hear any change while in "LM" Menu Page unless you have the Keyboard Split "ON". See page 61 for more information about the Keyboard Split Advanced Feature.

This data CAN be stored to a Patch. To see a total listing of all parameters that can be saved to a Patch, see the Parameter Data Table on page 101.

To EXIT this menu, simply touch the EDIT Touch Button.

Leslie

LESLIE FAST Touch Tab


LESLIE
FAST

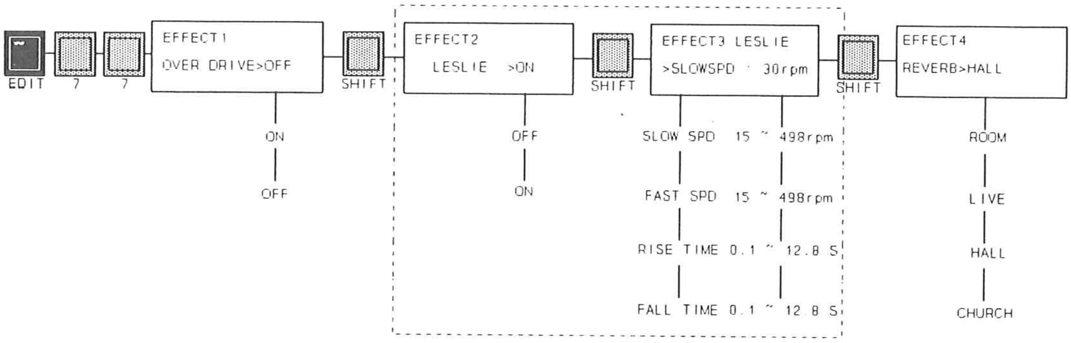
Touching the LESLIE FAST Touch Tab "ON" (red LED lit) will cause the Leslie Speaker rotors to rotate fast. Touching the LESLIE FAST Touch Tab "OFF" (red LED not lit) will switch the Leslie Speaker rotors to the slow mode.

If the XB-2 is connected to a standard amp and speakers, this Touch Tab will control the XB-2's internal electronic Leslie effect.

If the XB-2 is connected to an external Leslie Speaker cabinet, this Touch Tab will control the external Leslie Speaker.

NOTE: When an external Leslie Speaker cabinet is connected, the XB-2's internal electronic Leslie effect is disabled. For more information see page 79.

Advanced Features - Leslie


EDIT
7
7
EFFECT1
OVER DRIVE>OFF
ON
OFF
SHIFT
EFFECT2
LESLIE >ON
OFF
ON
SHIFT
EFFECT3 LESLIE
>SLOWSPD : 30rpm
SLOW SPD 15 ~ 498rpm
FAST SPD 15 ~ 498rpm
RISE TIME 0.1 ~ 12.8 S
FALL TIME 0.1 ~ 12.8 S
SHIFT
EFFECT4
REVERB>HALL
ROOM
LIVE
HALL
CHURCH

These two Advanced Feature Menus allow you to make the following changes to the XB-2:

1. Leslie ON / OFF -
   Allows you to disable the internal electronic Leslie effect.
2. Leslie Rotor Options -
   Allows you to select the Slow Speed, Fast Speed, Rise Time and Fall Time of the internal electronic Leslie effect.

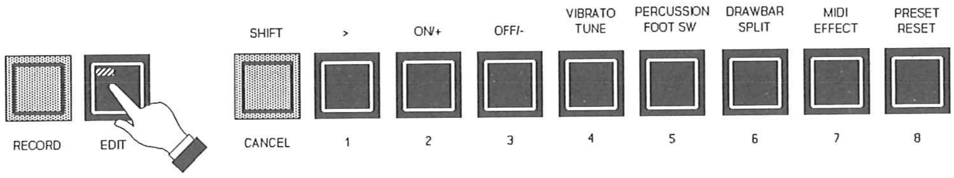
The following pages give a more detailed explanation of how these Advanced Feature Menus work.

EFFECT2 - LESLIE = EDIT + 7 + 7 + SHIFT

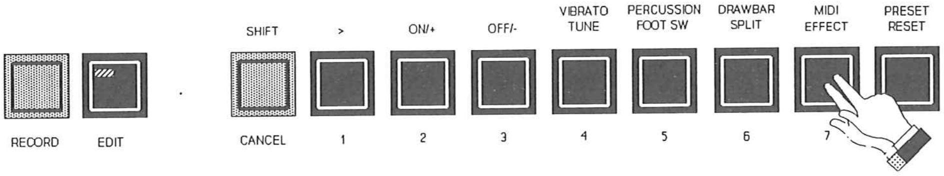
This Advanced Feature allows you to disable the internal electronic Leslie effect.

To access this Menu Page, do the following:

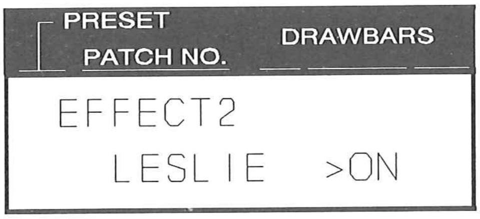
1. Touch the EDIT Touch Button "ON" (red LED lit).


SHIFT
>
ON/+
OFF/-
VIBRATO TUNE
PERCUSSION FOOT SW
DRAWBAR SPLIT
MIDI EFFECT
PRESET RESET
RECORD
EDIT
CANCEL
1
2
3
4
5
6
7
8

2. Touch the black number 7 [MIDI/EFFECT] Touch Button twice.


SHIFT
>
ON/+
OFF/-
VIBRATO TUNE
PERCUSSION FOOT SW
DRAWBAR SPLIT
MIDI EFFECT
PRESET RESET
RECORD
EDIT
CANCEL
1
2
3
4
5
6
7

3. Touch the gray SHIFT Touch Button once. The Information Center Display should show the following:


PRESET
PATCH NO.
DRAWBARS

```
EFFECT2
  LESLIE   >ON
```

The default setting is "ON".

4. Now select the option you wish by doing the following:

   Use the black number 2 [ON/+] and the number 3 [OFF/-] Touch Buttons to turn the electronic Leslie "ON" or "OFF".

NOTE: If a Leslie Speaker cabinet is connected using the 11-pin Leslie connector, the electronic Leslie is automatically disabled.

> This data CAN be stored to a Patch. To see a total listing of all parameters that can be saved to a Patch, see the Parameter Data Table on page 101.

To EXIT this menu, simply touch the EDIT Touch Button.

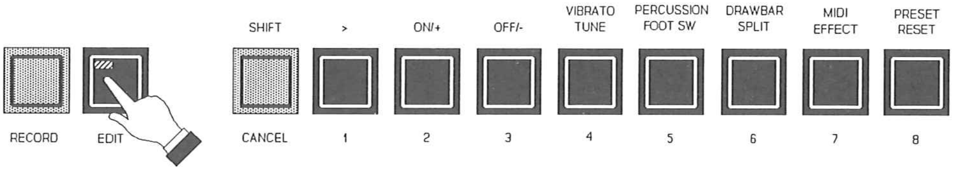
EFFECT3 - Leslie Speed = EDIT + 7 + 7 + SHIFT + SHIFT

Although each Leslie Speaker cabinet is carefully calibrated at the factory, several factors such as motor age and placement of the belts on the pulleys can affect the speeds of the rotors, as well as the time required for the rotors to speed up (Rise Time) and slow down (Fall Time). With this Advanced Feature, you can select the settings for the electronic Leslie Speed & Rise and Fall times you prefer.

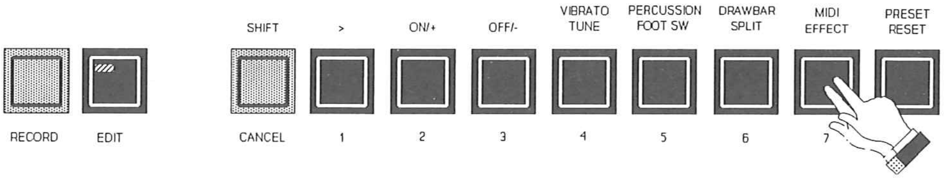
NOTE: This Advanced Feature DOES NOT affect a connected external Leslie Speaker cabinet.

To access this Menu Page, do the following:

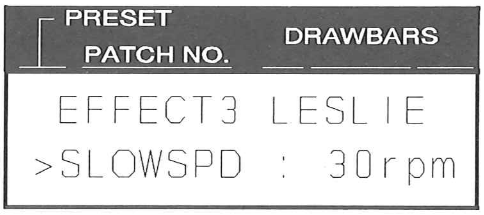
1. Touch the EDIT Touch Button "ON" (red LED lit).


SHIFT
>
ON/+
OFF/-
VIBRATO TUNE
PERCUSSION FOOT SW
DRAWBAR SPLIT
MIDI EFFECT
PRESET RESET
RECORD
EDIT
CANCEL
1
2
3
4
5
6
7
8

2. Touch the black number 7 [MIDI/EFFECT] Touch Button twice.


SHIFT
>
ON/+
OFF/-
VIBRATO TUNE
PERCUSSION FOOT SW
DRAWBAR SPLIT
MIDI EFFECT
PRESET RESET
RECORD
EDIT
CANCEL
1
2
3
4
5
6
7

3. Touch the gray SHIFT Touch Button twice. The Information Center Display should show the following:


PRESET
PATCH NO.
DRAWBARS

```
EFFECT3 LESLIE
>SLOWSPD : 30rpm
```

4. Now select the Leslie Rotary options by doing the following:

   Use the black number 1 [>] Select Touch Button to move the Prompter Mark [>] between Speed and Time selections and the values for Speed and Time.

   Use the black number 2 [ON/+] Touch Button to scroll up through the parameters.

   Use the black number 3 [OFF/-] Touch Button to scroll down through the parameters.

The data chart below shows the options, speed adjustment parameters and the rise and fall parameters.

LESLIE ROTARY PARAMETERS

Option	Parameter Limits	
Slow Speed	15 ~ 498rpm	*30rpm
Fast Speed	15 ~ 498rpm	*388rpm
Rise Time	0.1 ~ 12.8s	*5.0s
Fall Time	0.1 ~ 12.8s	*3.5s

*default setting

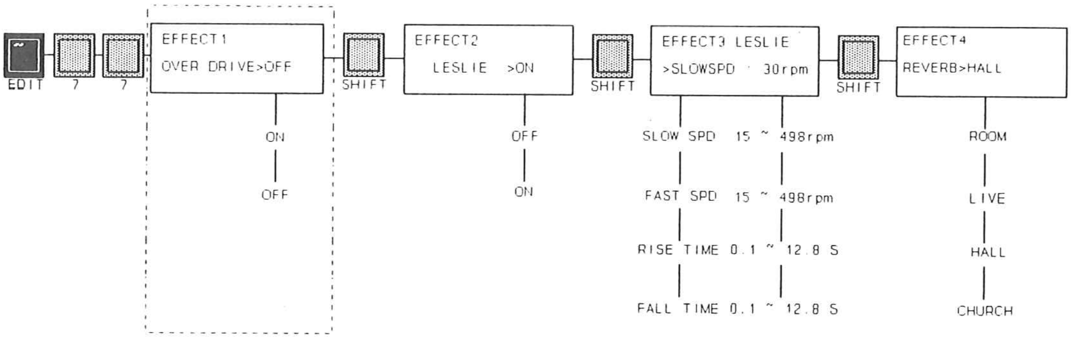
This data CAN be stored to a Patch. To see a total listing of all parameters that can be saved to a Patch, see the Parameter Data Table on page 101.

To EXIT this menu, simply touch the EDIT Touch Button.

Over Drive

Over Drive adds the fuzzy, raspy, dirty sound that vacuum tubes create when the volume of a tube Leslie Speaker is pushed to its sound limit. Once the Over Drive effect is turned "ON", you can adjust the amount by using the Modulation Wheel (left wheel of the two).

Advanced Feature - Over Drive


EDIT
7
7
EFFECT1
OVER DRIVE>OFF
ON
OFF
SHIFT
EFFECT2
LESLIE >ON
OFF
ON
SHIFT
EFFECT3 LESLIE
>SLOWSPD 30rpm
SLOW SPD 15 ~ 498rpm
FAST SPD 15 ~ 498rpm
RISE TIME 0.1 ~ 12.8 S
FALL TIME 0.1 ~ 12.8 S
SHIFT
EFFECT4
REVERB>HALL
ROOM
LIVE
HALL
CHURCH

This Advanced Feature Menu allows you to make the following changes to the XB-2:

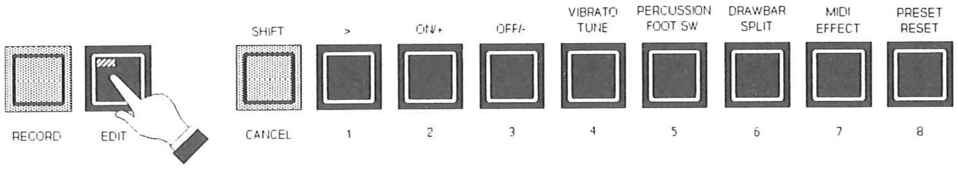
Over Drive ON / OFF -
Allows you to turn the Over Drive effect "ON" or "OFF".

The following pages give a more detailed explanation of how this Advanced Feature Menu works.

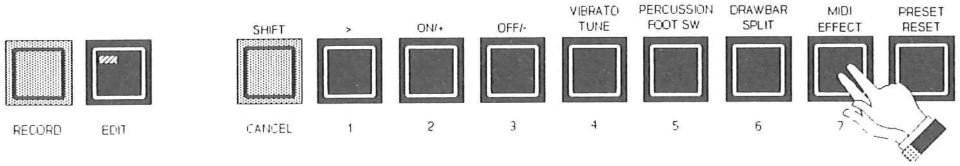
EFFECT1 - OVER DRIVE = EDIT + 7 + 7

To access the EFFECT1 Menu Page, do the following:

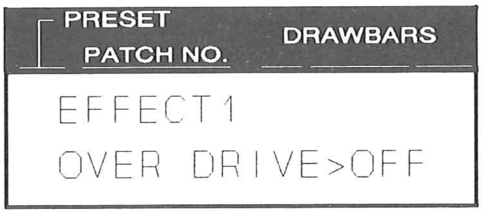
1. Touch the EDIT Touch Button "ON" (red LED lit).


SHIFT
>
ON/+
OFF/-
VIBRATO TUNE
PERCUSSION FOOT SW
DRAWBAR SPLIT
MIDI EFFECT
PRESET RESET
RECORD
EDIT
CANCEL
1
2
3
4
5
6
7
8

2. Touch the black number 7 [MIDI/EFFECT] Touch Button <u>twice</u>.


SHIFT
>
ON/+
OFF/-
VIBRATO TUNE
PERCUSSION FOOT SW
DRAWBAR SPLIT
MIDI EFFECT
PRESET RESET
RECORD
EDIT
CANCEL
1
2
3
4
5
6
7

The Information Center Display should show the following:


PRESET
PATCH NO.
DRAWBARS

```
EFFECT1
OVER DRIVE>OFF
```

The default setting for the Over Drive is "OFF".

3. Now select the Over Drive option by doing the following:

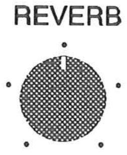
   Use the black number 2 [ON/+] or the black number 3 [OFF/-] Touch Button to turn Over Drive "ON" or "OFF".

Pull the Modulation Wheel <u>down</u> (toward you) to <u>decrease</u> the amount of Over Drive. Push the Modulation Wheel <u>up</u> (away from you) to <u>increase</u> the amount of Over Drive.

This data CAN be stored to a Patch. To see a total listing of all parameters that can be saved to a Patch, see the <u>Parameter Data Table</u> on page 101.

To EXIT this menu, simply touch the EDIT Touch Button.

Reverb



Located underneath the keyboard just to the left of the Master Volume Control is the Reverb Gain Control. Using Reverb adds the beautiful concert hall effect to all voices when you are playing. It counteracts the "deadening" effect of the carpets, drapes and the furniture in your home.

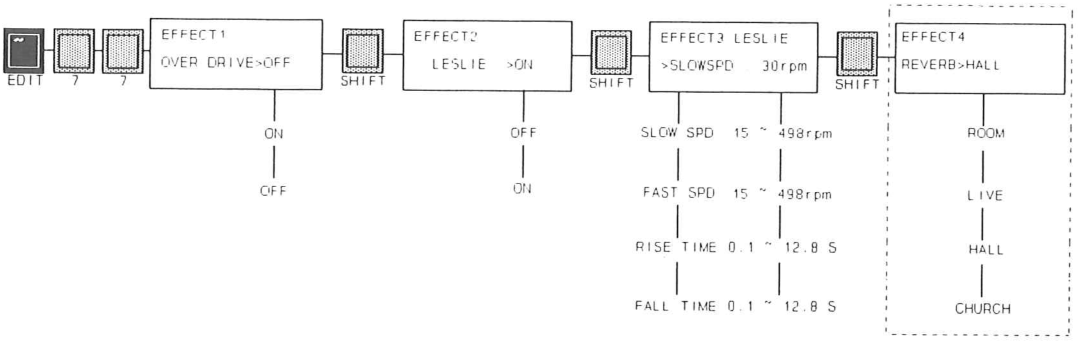
Turning this Rotary Control clockwise (right) will increase the overall amount of Reverb. Turning this control counter-clockwise (left) will decrease the amount of Reverb.

Turning the control to the center position (half way) or more will produce a medium amount of reverberation.

Turning the control below the half way point to no less then a quarter of the way will produce brisk reverberation best for many popular and jazz styles of music.

NOTE: The default value for Reverb is "HALL". However, the Reverb type can be set for "ROOM", "LIVE", "HALL" or "CHURCH" by using the EFFECT4 Advanced Feature.

Advanced Feature - Reverb


EDIT
7
7
EFFECT1
OVER DRIVE>OFF
ON
OFF
SHIFT
EFFECT2
LESLIE >ON
OFF
ON
SHIFT
EFFECT3 LESLIE
>SLOWSPD 30rpm
SLOW SPD 15 ~ 498rpm
FAST SPD 15 ~ 498rpm
RISE TIME 0.1 ~ 12.8 S
FALL TIME 0.1 ~ 12.8 S
SHIFT
EFFECT4
REVERB>HALL
ROOM
LIVE
HALL
CHURCH

This Advanced Feature Menu allows you to make the following changes to the XB-2:

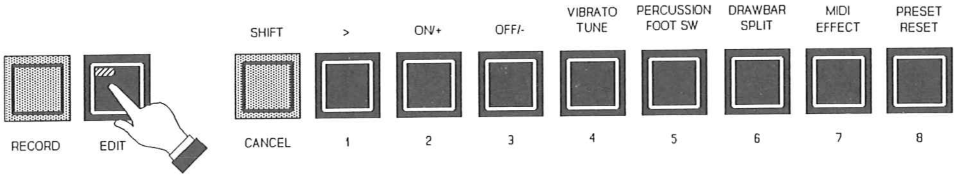
Reverb Program Select -
Allows you to select one of four digital Reverb programs..

The following pages give a more detailed explanation of how this Advanced Feature Menu works.

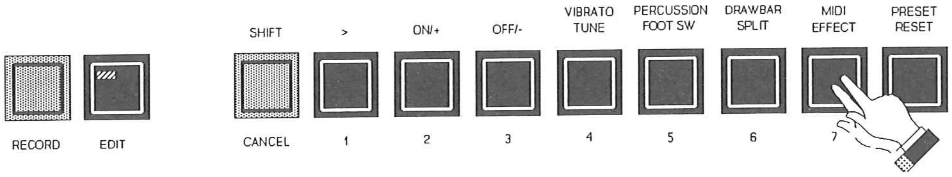
EFFECT4 - REVERB = EDIT + 7 + 7 + SHIFT + SHIFT + SHIFT

To access the EFFECT4 Menu Page, do the following:

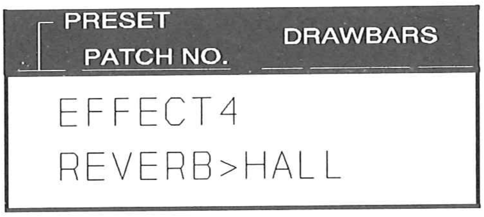
1. Touch the EDIT Touch Button "ON" (red LED lit).


SHIFT
>
ON/+
OFF/-
VIBRATO TUNE
PERCUSSION FOOT SW
DRAWBAR SPLIT
MIDI EFFECT
PRESET RESET
RECORD
EDIT
CANCEL
1
2
3
4
5
6
7
8

2. Touch the black number 7 [MIDI/EFFECT] Touch Button twice.


SHIFT
>
ON/+
OFF/-
VIBRATO TUNE
PERCUSSION FOOT SW
DRAWBAR SPLIT
MIDI EFFECT
PRESET RESET
RECORD
EDIT
CANCEL
1
2
3
4
5
6
7

3. Touch the gray SHIFT Touch Button three times. The Information Center Display should show the following:


PRESET
PATCH NO.
DRAWBARS

EFFECT4
REVERB>HALL

The default setting for REVERB is "HALL".

4. Now select the Reverb Program by doing the following:

Use the black number 2 [ON/+] and the number 3 [OFF/-] Touch Buttons to select from among the Reverb Programs.

The data chart below describes the options you may select for the digital Reverb.

REVERB PROGRAM OPTIONS

Reverb	Description	Duration
ROOM	Slightly large room with hard surfaces.	.5 sec.
LIVE	Moderately dry, similar to a recording studio.	1.0 sec.
*HALL	A school gymnasium or multi-purpose room.	1.5 sec.
CHURCH	Auditorium with high ceilings and hard surfaces.	2.0 sec.

*default setting

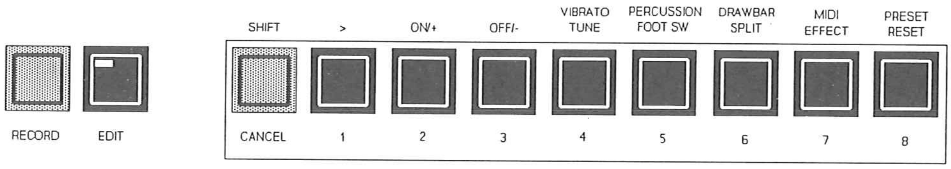
This is a Global Command, and this data CAN NOT be stored to a Preset. To see a total listing of all Global Commands, see the Global Initial Data Table on page 115.

To EXIT this menu, simply touch the EDIT Touch Button.

Presets

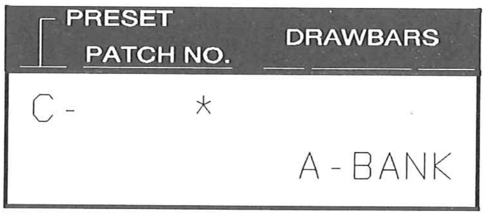
PRESETS

The registrations contained in the Presets are pre-programmed at the factory but can be programmed with your own registrations. These factory Presets can be brought back by doing the All Reset procedure.


SHIFT
>
ON/+
OFF/-
VIBRATO TUNE
PERCUSSION FOOT SW
DRAWBAR SPLIT
MIDI EFFECT
PRESET RESET
RECORD
EDIT
CANCEL
1
2
3
4
5
6
7
8

➤ CANCEL Mode

Touch the gray CANCEL Touch Button. The Information Center Display should look similar to this:


PRESET
PATCH NO.
DRAWBARS
C-
*
A-BANK

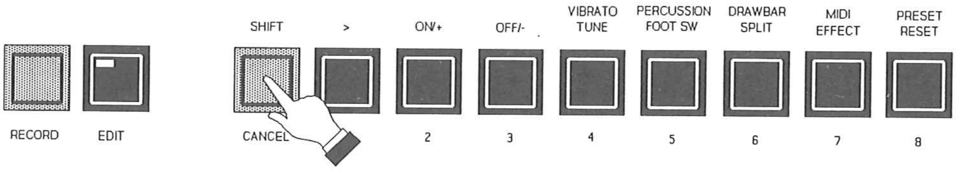
The XB-2 is now in CANCEL Mode. You now have control over Drawbar settings, Touch Tab settings such as Vibrato and Percussion, and Advanced Feature settings.

➤ Preset Banks

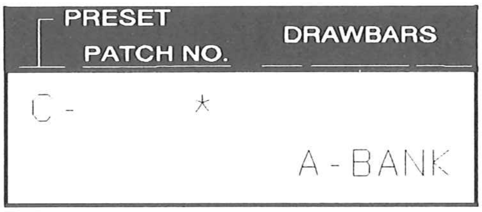
You can select from among 4 different Preset Banks. This allows you to control more Presets using the same eight Preset Touch Buttons.

TRY THIS:

1. Touch the gray CANCEL Touch Button.


SHIFT
>
ON/+
OFF/-
VIBRATO TUNE
PERCUSSION FOOT SW
DRAWBAR SPLIT
MIDI EFFECT
PRESET RESET
RECORD
EDIT
CANCEL
2
3
4
5
6
7
8

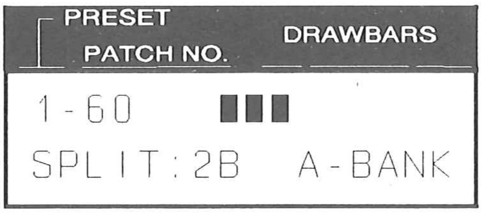
The Information Center Display should show the following:



C- *
A-BANK

Notice that the Information Center Display shows "A-BANK" in the lower right corner.

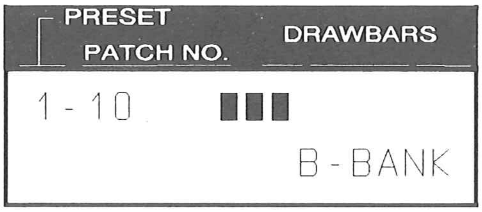
3. Touch the black number 1 Select Touch Button once. The Information Center Display should show the following:



1-60 ■■■
SPLIT:2B A-BANK

You have now selected Preset Bank "A".

4. While in this mode, Touch the black number 1 Select Touch Button once. The Information Center Display should now show the following:



1-10 ■■■
B-BANK

You have now selected Preset Bank "B". Each time you touch a numbered Touch Button to select Presets, then touch the same Touch Button again, you can select a different bank. If you wish, you can touch the black number 1 Select Touch Button again to select the "C" bank, and again to select the "D" bank. If you touch the CANCEL Touch Button, whatever bank you have selected will appear in the lower right-hand corner of the display ("A-BANK", "B-BANK", "C-BANK" or "D-BANK").

If the "D" bank is selected and you touch the same numbered Touch Button you previously selected, the "A" bank will reappear.

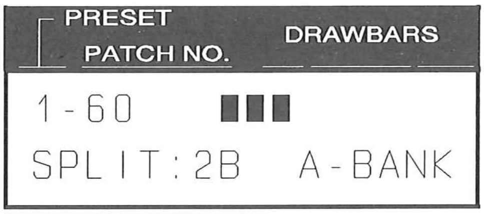
SPECIAL NOTE: The currently active Drawbar setting is graphically displayed on the upper line of the Information Center Display. If you would like to see a numeric display of the current Drawbar setting, touch and hold the gray RECORD Touch Button. You will see the Drawbar setting displayed numerically. To return to the graphic Drawbar display, simply release the gray RECORD Touch Button.

Presets and Patches

Your Hammond XB-2 has an inbuilt library of 128 different combinations of Drawbars and other effects such as Vibrato, Leslie, etc. These combinations are called Patches. A Preset is simply a Patch which is accessible by using the Preset Touch Buttons.

TRY THIS:

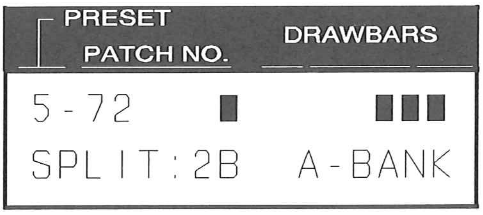
1. Touch the black number 1 Touch Button. The Information Center Display should show the following:



```
1-60      ▮▮▮
SPLIT:2B   A-BANK
```

In the above example, you see that "1-60" is displayed in the upper left hand corner of the display. "1" refers to the Preset number while "60" refers to the Patch number. You will also notice "A-BANK" displayed in the lower right hand corner of the Information Center Display. This shows that Bank "A" is active. Thus, Preset #1 in Bank A contains Patch #60.

2. For this example, touch the black number 5 Touch Button. The Information Center Display should show the following:



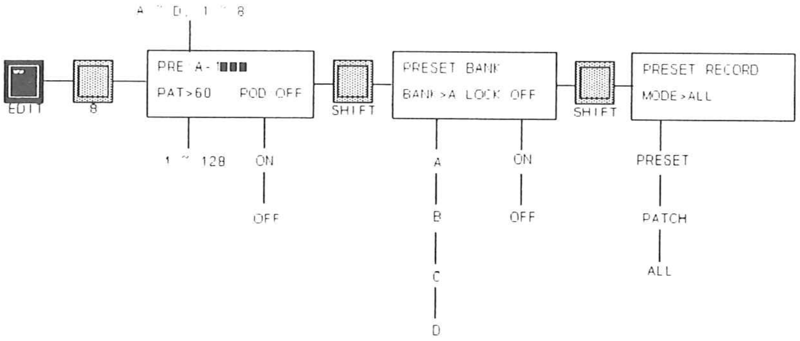
```
5-72      ▮      ▮▮▮
SPLIT:2B   A-BANK
```

Notice that "5-72" is now displayed in the upper left hand corner of the display. "5" refers to the Preset number while "72" refers to the Patch number. Thus, Patch #72 is loaded into Preset 5.

The data chart on the next page shows the Preset and Patch number information for each Preset Bank.

PRESET BANK INFORMATION		
Preset Bank	**Preset #**	**Patch #**
Bank A	A-1	60
	A-2	62
	A-3	84
	A-4	83
	A-5	72
	A-6	73
	A-7	76
	A-8	79
Bank B	B-1	10
	B-2	12
	B-3	35
	B-4	34
	B-5	22
	B-6	23
	B-7	26
	B-8	29
Bank C	C-1	56
	C-2	71
	C-3	88
	C-4	81
	C-5	68
	C-6	59
	C-7	65
	C-8	78
Bank D	D-1	5
	D-2	21
	D-3	38
	D-4	31
	D-5	18
	D-6	9
	D-7	15
	D-8	28

Advanced Features - Preset


A ~ D, 1 ~ 8
EDIT
8
PRE A-1███
PAT>60 POD OFF
1 ~ 128
ON
OFF
SHIFT
PRESET BANK
BANK>A LOCK OFF
A
B
C
D
ON
OFF
SHIFT
PRESET RECORD
MODE>ALL
PRESET
PATCH
ALL

These Advanced Feature Menus allow you to make the following changes to the XB-2's Presets:

1. Preset - Preset Number, Patch Number and "POD" (Priority on Drawbar)
   Allows you to preview and select Presets and Patches, and turn "POD" "ON" or "OFF".

2. Preset Bank Lock -
   Allows you to "lock in" a particular Preset Bank - "A", "B", "C" or "D" - on the Preset Touch Buttons.

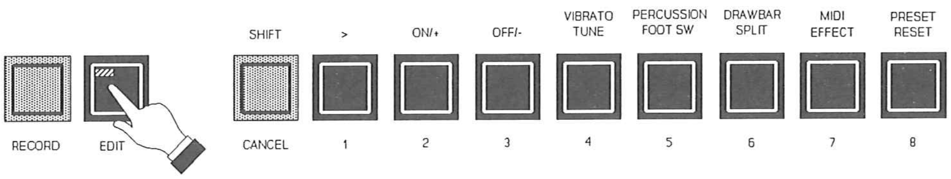
3. Preset Record -
   Allows you to select which parameters are stored in a Preset/Patch.

The following pages give a more detailed explanation of how these Advanced Feature Menus work.

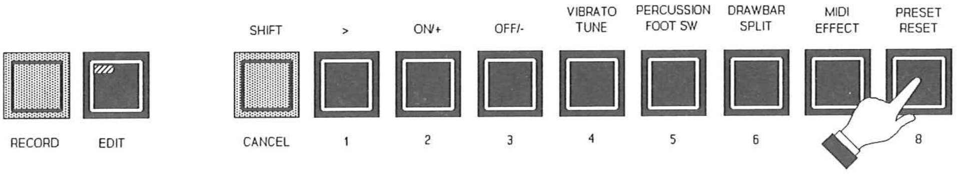
PRESET NUMBER = EDIT + 8

To access this Menu Page, do the following:

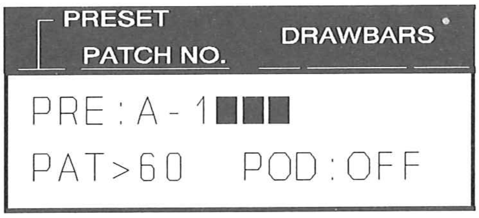
1. Touch the EDIT Touch Button "ON" (red LED lit).


SHIFT
>
ON/+
OFF/-
VIBRATO TUNE
PERCUSSION FOOT SW
DRAWBAR SPLIT
MIDI EFFECT
PRESET RESET
RECORD
EDIT
CANCEL
1
2
3
4
5
6
7
8

2. Touch the black number 8 [PRESET/RESET] Touch Button once.


SHIFT
>
ON/+
OFF/-
VIBRATO TUNE
PERCUSSION FOOT SW
DRAWBAR SPLIT
MIDI EFFECT
PRESET RESET
RECORD
EDIT
CANCEL
1
2
3
4
5
6
8

The Information Center Display should show the following:


PRESET
PATCH NO.
DRAWBARS

```
PRE:A-1███
PAT>60   POD:OFF
```

When the gray CANCEL Touch Button is active, the default setting for the Preset (PRE) is "1".

4. Now select the options you wish by doing the following:

   Use the black number 1 [>] Select Touch Button to move the Prompter Mark [>] between Preset selections, Patch selections and POD (Priority on Drawbar).

   Use the black number 2 [ON/+] and the number 3 [OFF/-] Touch Buttons to select Presets and Patches and to turn POD "ON" or "OFF".

NOTE: Patch numbers from 1 to 109 contain factory settings that can be edited or totally reprogrammed. Patch numbers 110 to 128 are blank so that if you wish to create and store your own settings you can do so without overwriting any existing Patches. However, if you overwrite or update existing Patches, you can restore the factory settings by doing the All Reset procedure described starting on page 179. Please note that doing the All Reset procedure restores all Patches, including #110 - 128.

The data chart below explains more about these Advanced Feature functions.

PRESET SELECT DATA CHART	
PRESET SELECT **1 - 8**	When the Prompter Mark [>] is in front of the letters "PRE", use the black number 2 **[ON/+]** and the number 3 **[OFF/-]** Touch Buttons to scroll up or down through the Presets.
PATCH SELECT **1 - 128**	When the Prompter Mark [>] is in front of the letters "PAT", use the black number 2 **[ON/+]** and the number 3 **[OFF/-]** Touch Buttons to scroll up or down through the Patches. If you want to listen to each Patch, simply scroll through the Patches while pressing and holding keys.
***POD (Priority on Drawbars)**	When POD (Priority On Drawbars) is "OFF", the Drawbars cannot be used when a Preset is selected. When POD (Priority On Drawbars) is "ON" the Drawbars can be used when a Preset is active. This allows you to set up performance data in the Patches while still retaining use of the Drawbars. For example, if a sound module is connected via MIDI, POD is "ON" and you touch a Preset, MIDI Program Changes can be sent to the sound module without changing the current Drawbar setting.

*default setting is "OFF".

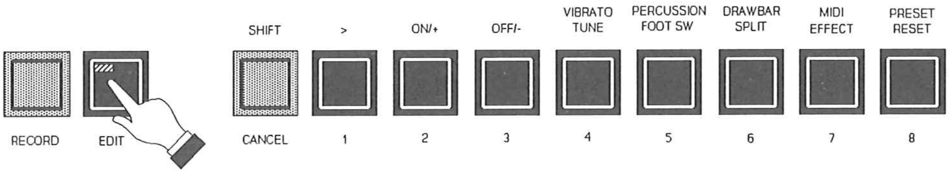
> The POD "ON/OFF" setting CAN be stored to a Patch. To see a total listing of all parameters that can be saved to the Presets, see the Parameter Data Table on page 101.

To EXIT this menu, simply touch the EDIT Touch Button.

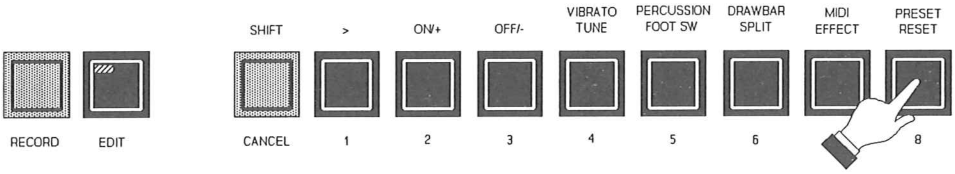
PRESET BANK LOCK = EDIT + 8 + SHIFT

To access this Menu Page, do the following:

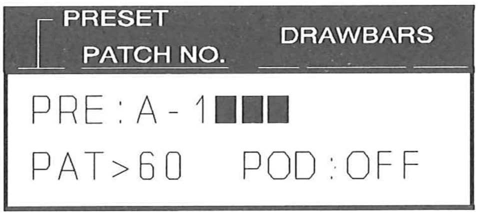
1. Touch the EDIT Touch Button "ON" (red LED lit).


SHIFT
>
ON/+
OFF/-
VIBRATO TUNE
PERCUSSION FOOT SW
DRAWBAR SPLIT
MIDI EFFECT
PRESET RESET
RECORD
EDIT
CANCEL
1
2
3
4
5
6
7
8

2. Touch the black number 8 [PRESET/RESET] Touch Button once.

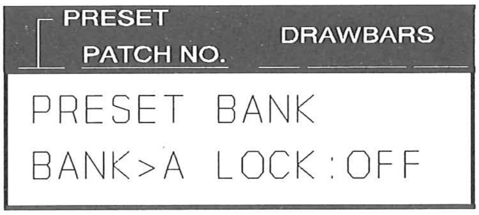

SHIFT
>
ON/+
OFF/-
VIBRATO TUNE
PERCUSSION FOOT SW
DRAWBAR SPLIT
MIDI EFFECT
PRESET RESET
RECORD
EDIT
CANCEL
1
2
3
4
5
6
8

The Information Center Display should show the following:


PRESET
PATCH NO.
DRAWBARS

PRE:A-1■■■
PAT>60 POD:OFF

3. Touch the gray SHIFT Touch Button once. The Information Center Display should show the following:


PRESET
PATCH NO.
DRAWBARS

PRESET BANK
BANK>A LOCK:OFF

4. Now select the option you wish by doing the following:

   Use the black number 1 [>] Select Touch Button to move the Prompter Mark [>] between Preset Bank selections and "ON / OFF" selections.

   Use the black number 2 [ON/+] and the number 3 [OFF/-] Touch Buttons to select the Preset Bank or turn Preset Bank Lock "ON" or "OFF".

The data chart below explains how this Advanced Feature functions.

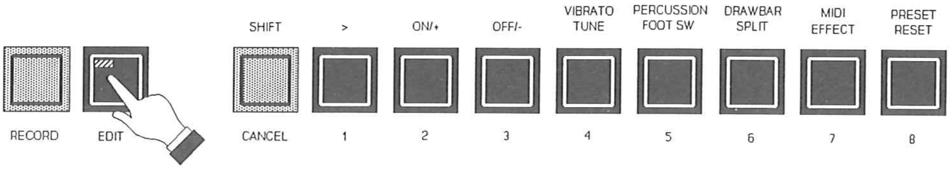
PRESET BANK LOCK DATA CHART	
PRESET BANK LOCK "OFF"	You can select different Preset Banks by touching a numbered Preset Touch Button, then touching it again. This is explained more fully starting back on page 88.
PRESET BANK LOCK "ON"	Touching the same numbered Preset Touch Button will not select different Banks. This is so that you can have access to one Preset Bank without accidentally selecting a different Bank.

To EXIT this menu, simply touch the EDIT Touch Button.

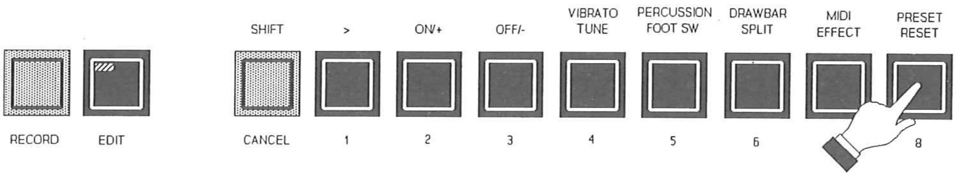
PRESET RECORD = EDIT + 8 + SHIFT + SHIFT

To access this Menu Page, do the following:

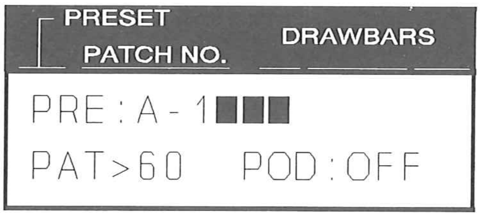
1. Touch the EDIT Touch Button "ON" (red LED lit).


SHIFT
>
ON/+
OFF/-
VIBRATO TUNE
PERCUSSION FOOT SW
DRAWBAR SPLIT
MIDI EFFECT
PRESET RESET
RECORD
EDIT
CANCEL
1
2
3
4
5
6
7
8

2. Touch the black number 8 [PRESET/RESET] Touch Button once.

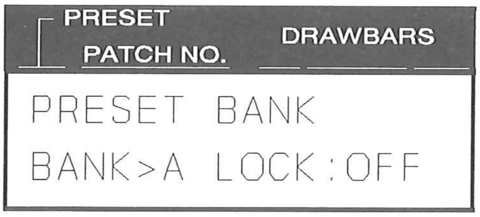

SHIFT
>
ON/+
OFF/-
VIBRATO TUNE
PERCUSSION FOOT SW
DRAWBAR SPLIT
MIDI EFFECT
PRESET RESET
RECORD
EDIT
CANCEL
1
2
3
4
5
6
8

The Information Center Display should show the following:


PRESET
PATCH NO.
DRAWBARS

```
PRE:A-1■■■
PAT>60   POD:OFF
```

3. Touch the gray SHIFT Touch Button twice. The Information Center Display should show the following:


PRESET
PATCH NO.
DRAWBARS

```
PRESET BANK
BANK>A LOCK:OFF
```

4. Now select the option you wish by doing the following:

   Use the black number 2 [ON/+] and the number 3 [OFF/-] Touch Buttons to select "ALL", "PRESET" or "PATCH".

The data chart below explains how this Advanced Feature functions.

PRESET RECORD DATA CHART	
***ALL**	All parameters capable of being stored to a Patch will be saved.
PRESET	Only MIDI parameters are saved.
PATCH	Only internal parameters such as Vibrato Speed, Percussion Decay, etc. are saved.

*default setting

To see a total listing of all parameters that can be saved to the Presets, see the Parameter Data Table on page 101.

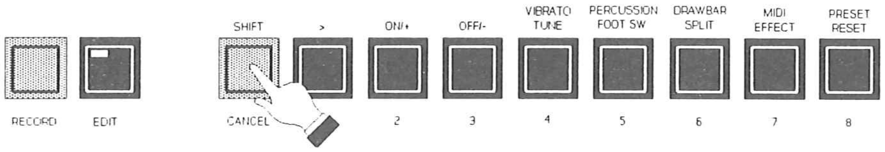
To EXIT this menu, simply touch the EDIT Touch Button.

➤ Saving Preset Data

To save a registration, do the following:

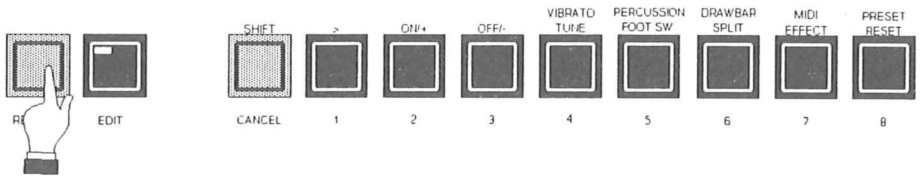
If you want to clear the CANCEL Touch Button parameters, see Selective Reset found on page 177.

1. Touch the gray CANCEL Touch Button.

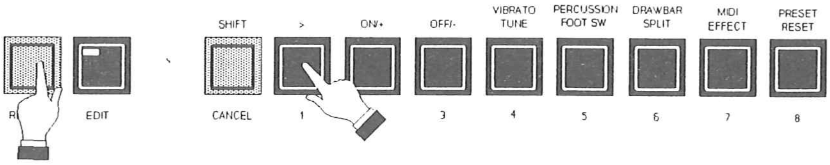

SHIFT
>
ON/+
OFF/-
VIBRATO TUNE
PERCUSSION FOOT SW
DRAWBAR SPLIT
MIDI EFFECT
PRESET RESET
RECORD
EDIT
CANCEL
2
3
4
5
6
7
8

2. Set up the XB-2 with whatever settings you wish. Refer to the Parameter Data Table on page 101 for a list of data that can be saved.

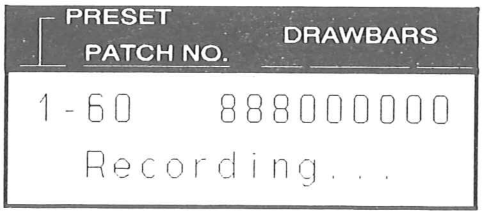
3. After you have customized your settings, use your left hand and touch and hold the gray RECORD Touch Button.


SHIFT
>
ON/+
OFF/-
VIBRATO TUNE
PERCUSSION FOOT SW
DRAWBAR SPLIT
MIDI EFFECT
PRESET RESET
EDIT
CANCEL
1
2
3
4
5
6
7
8

4. While touching and holding the gray RECORD Touch Button, touch one of the black PRESET Touch Buttons marked 1 though 8. For this example, use number 1.


SHIFT
>
ON/+
OFF/-
VIBRATO TUNE
PERCUSSION FOOT SW
DRAWBAR SPLIT
MIDI EFFECT
PRESET RESET
EDIT
CANCEL
1
3
4
5
6
7
8

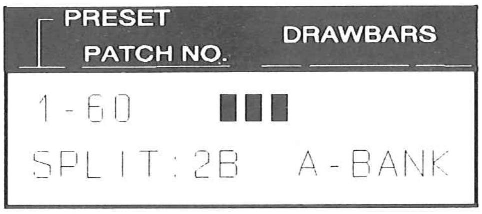
The Information Center Display should flash and look similar to this:



PRESET PATCH NO.
DRAWBARS

1-60 888000000
Recording...

After the "Recording..." message has been displayed, the Information Center Display should look similar to this:



```
1-60     ███
SPLIT:2B   A-BANK
```

Repeat this same process to store new settings and data into each of the Presets. To reset the Presets, see All Reset on page 178.

NOTE: When settings are saved to a Preset, the data for the current Patch number being used by that Preset will be overwritten.

The following data table shows what parameters can be saved to a Patch.

PARAMETER DATA TABLE

Menu Number	Menu Selection		Parameter Choices
SPLIT2	DRAWBAR REGISTRATION	UPPER	
		LOWER	
TOUCH TABS	ORGAN SOLO		ON, *OFF
	PERCUSSION 2		ON, *OFF
	PERCUSSION 3		ON, *OFF
	VIBRATO		ON, *OFF
	LESLIE		ON, *OFF
VIBRATO1	VIBRATO MODE		V1, V2, V3, *C1, C2, C3
	VIBRATO SPEED		SLOW, MID, *NORMAL, MIDFAST, FAST
VIBRATO2	VIBRATO	UPPER	*ON, OFF
		LOWER	*ON, OFF
PERCUSSION1	PERCUSSION DECAY		*SLOW, FAST
	PERCUSSION SOFT		ON, *OFF
PERCUSSION2	PERCUSSION TOUCH		*ON, OFF
	PERCUSSION VELOCITY		ON, *OFF
PERCUSSION3	PERCUSSION LEVEL		1 ~ *16
PERCUSSION4	PERCUSSION DRAWBAR CANCEL		*ON, OFF
PERCUSSION5	PERCUSSION KEY TRACK		ON, *OFF
DRAWBAR1	DRAWBAR VOICE MODE	UPPER	*B-TYPE, MELLOW, BRITE
		LOWER	*B-TYPE, MELLOW, BRITE
DRAWBAR2	DRAWBAR ATTACK	UPPER	SLOW ATTACK, NO CLICK, SOFT CLICK, *NORMAL CLICK, MAX CLICK
		LOWER	SLOW ATTACK, NO CLICK, SOFT CLICK, *NORMAL CLICK, MAX CLICK
DRAWBAR3	DRAWBAR SUSTAIN	UPPER	ON, *OFF
		LOWER	ON, *OFF
	DRAWBAR SUSTAIN LENGTH	UPPER	*SHORT, MID, LONG
		LOWER	*SHORT, MID, LONG
DRAWBAR4	DRAWBAR FOLD BACK	LOW	1C ~ *2C
		HIGH	*4G ~ 5C
SPLIT1	SPLIT		ON, *OFF
	SPLIT POINT		1C ~ 6C (*2B)
SPLIT3	LOWER OCTAVE		*NORMAL, UP
SPLIT4	LOWER CANCEL		ON, *OFF
MIDI5 CHANNEL	MIDI GATE	UPPER	*ON, OFF
		LOWER	*ON, OFF
		ZONE1	*ON, OFF
		ZONE2	*ON, OFF
	MIDI CHANNEL	UPPER	1 ~ 16 (*1)
		LOWER	1 ~ 16 (*2)
		ZONE1	1 ~ 16 (*3)
		ZONE2	1 ~ 16 (*4)
MIDI6 KEYMAP	KEYMAP LO/HI	UPPER	*1C ~ *6C
		LOWER	*1C ~ *6C
		ZONE1	*1C ~ *6C
		ZONE2	*1C ~ *6C
MIDI7 KEYOCTAVE	KEYOCTAVE LO/HI	ZONE1	-4 ~ *0 ~ +4
		ZONE2	-4 ~ *0 ~ +4
MIDI8 PROGRAM	PROGRAM NO.	ZONE1	*1 ~ 128
		ZONE2	*1 ~ 128
	VARIATION NO.	ZONE1	*0 ~ 127
		ZONE2	*0 ~ 127
MIDI9 VOLUME	MIN/MAX VOLUME	ZONE1	*0 ~ *127
		ZONE2	*0 ~ *127
MIDI10 VELOCITY	VELOCITY CURVE	ZONE1	OFF, *1 ~ 6
		ZONE2	OFF, *1 ~ 6
EFFECT1	OVER DRIVE		ON, *OFF
EFFECT2	LESLIE		*ON, OFF
EFFECT3	LESLIE	SLOW SPEED	*30 ~ 498rpm
		FAST SPEED	30 ~ 498rpm (*388rpm)
		RISE TIME	0.1 ~ 12.8s (*5.0)
		FALL TIME	0.1 ~ 12.8s (*3.5)

*default settings if no Preset is active (Cancel mode)

PATCH PARAMETER LIST

FLUTES SINGLE			1 SINE	2 ACCOMP	3 TIBIA	4 BRILL	5 WALTER	6 JUICY	7 TIBIAS	8 TIBIA CHORUS	9 FULL TIBIAS
DRAWBAR REGIST	UPPER LOWER		00 8000 000 80 0800 000	00 8600 000 80 0800 000	00 8402 000 80 0800 000	00 8000 004 80 0800 000	80 0800 000 80 0800 000	80 0800 006 80 0800 000	80 4604 004 80 0800 000	80 6804 003 80 0800 000	80 6806 008 80 0800 000
ORGAN SOLO			OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
PERCUSSION	2nd 3rd		OFF OFF	OFF OFF	OFF OFF	OFF OFF	OFF OFF	OFF OFF	OFF OFF	OFF OFF	OFF OFF
VIBRATO			OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
LESLIE S/F			OFF	OFF	OFF	OFF	OFF	ON	ON	ON	ON
VIBRATO MODE			V2	V2	V2	V2	V2	V2	V2	V2	V2
VIBRATO SPEED			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
VIBRATO	UPPER LOWER		ON OFF	ON OFF	ON OFF	ON OFF	ON OFF	ON OFF	ON OFF	ON OFF	ON OFF
PERCUSSION DECAY			S	S	S	S	S	S	S	S	S
PERCUSSION SOFT			OFF	ON	ON	ON	ON	ON	ON	ON	ON
PERCUSSION TOUCH			ON	ON	ON	ON	ON	ON	ON	ON	ON
PERCUSSION VELOCITY			OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
PERCUSSION LEVEL			16	16	16	16	16	16	16	16	16
PERC. DRAWBAR CANCEL			ON	ON	ON	ON	ON	ON	ON	ON	ON
PERC. KEY TRACK			OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
DRAW. VOICING	UPPER LOWER		MELLOW MELLOW	MELLOW MELLOW	MELLOW MELLOW	MELLOW MELLOW	MELLOW MELLOW	MELLOW MELLOW	MELLOW MELLOW	MELLOW MELLOW	MELLOW MELLOW
DRAW. ATTACK	UPPER LOWER		NORM CLICK NORM CLICK	NORM CLICK NORM CLICK	NORM CLICK NORM CLICK	NORM CLICK NORM CLICK	NORM CLICK NORM CLICK	NORM CLICK NORM CLICK	NORM CLICK NORM CLICK	NORM CLICK NORM CLICK	NORM CLICK NORM CLICK
DRAW. SUSTAIN	UPPER LOWER		OFF OFF	OFF OFF	OFF OFF	OFF OFF	OFF OFF	OFF OFF	OFF OFF	OFF OFF	OFF OFF
DRAW. SUS. LENGTH	UPPER LOWER		SHORT SHORT	SHORT SHORT	SHORT SHORT	SHORT SHORT	SHORT SHORT	SHORT SHORT	SHORT SHORT	SHORT SHORT	SHORT SHORT
DRAW. FOLD BACK	LOW HIGH		2C 4G	2C 4G	2C 4G	2C 4G	2C 4G	2C 4G	2C 4G	2C 4G	2C 4G
SPLIT ON/OFF			OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
SPLIT POINT KEY			2B	2B	2B	2B	2B	2B	2B	2B	2B
LOWER OCTAVE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
LOWER CANCEL			OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
OVER DRIVE			OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
LESLIE			ON	ON	ON	ON	ON	ON	ON	ON	ON
LESLIE	SLOW SPEED FAST SPEED RISE TIME FALL TIME		30rpm 388rpm 5.0 s 3.5 s	30rpm 388rpm 5.0 s 3.5 s	30rpm 388rpm 5.0 s 3.5 s	30rpm 388rpm 5.0 s 3.5 s	30rpm 388rpm 5.0 s 3.5 s	30rpm 388rpm 5.0 s 3.5 s	30rpm 388rpm 5.0 s 3.5 s	30rpm 388rpm 5.0 s 3.5 s	30rpm 388rpm 5.0 s 3.5 s

SOLOS SINGLE		10 SUPER DRY	11 BLUE	12 BLUESY	13 DRY	14 WET	15 POWER DRIVE	16 BLUE 8	17 DRY 8	18 DUNE	19 SOLID
DRAWBAR REGIST	UPPER	88 8000 000	88 8000 000	88 8000 006	88 8800 000	88 8806 000	88 8880 000	00 8880 000	00 8888 000	08 8800 000	08 8800 006
	LOWER	85 8000 000	85 8000 000	85 8000 000	85 8000 000	85 8000 000	85 8000 000	85 8000 000	85 8000 000	85 8000 000	85 8000 000
ORGAN SOLO		OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
PERCUSSION	2nd	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
	3rd	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
VIBRATO		OFF	ON	ON	OFF	ON	OFF	ON	ON	ON	ON
LESLIE S/F		OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
VIBRATO MODE		C1	C1	C3	C1	C3	C2	C2	C2	C2	C3
VIBRATO SPEED		NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
VIBRATO	UPPER	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON
	LOWER	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
PERCUSSION DECAY		F	F	F	F	F	F	F	F	F	F
PERCUSSION SOFT		ON	ON	ON	ON	ON	ON	ON	ON	ON	ON
PERCUSSION TOUCH		ON	ON	ON	ON	ON	ON	ON	ON	ON	ON
PERCUSSION VELOCITY		OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
PERCUSSION LEVEL		16	16	16	16	16	16	16	16	16	16
PERC. DRAWBAR CANCEL		ON	ON	ON	ON	ON	ON	ON	ON	ON	ON
PERC. KEY TRACK		OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
DRAW. VOICING	UPPER	B-TYPE	B-TYPE	B-TYPE	B-TYPE	B-TYPE	B-TYPE	B-TYPE	B-TYPE	B-TYPE	B-TYPE
	LOWER	B-TYPE	B-TYPE	B-TYPE	B-TYPE	B-TYPE	B-TYPE	B-TYPE	B-TYPE	B-TYPE	B-TYPE
DRAW. ATTACK	UPPER	NORM CLICK	NORM CLICK	NORM CLICK	NORM CLICK	NORM CLICK	NORM CLICK	NORM CLICK	NORM CLICK	NORM CLICK	NORM CLICK
	LOWER	NORM CLICK	NORM CLICK	NORM CLICK	NORM CLICK	NORM CLICK	NORM CLICK	NORM CLICK	NORM CLICK	NORM CLICK	NORM CLICK
DRAW. SUSTAIN	UPPER	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
	LOWER	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
DRAW. SUS. LENGTH	UPPER	SHORT	SHORT	SHORT	SHORT	SHORT	SHORT	SHORT	SHORT	SHORT	SHORT
	LOWER	SHORT	SHORT	SHORT	SHORT	SHORT	SHORT	SHORT	SHORT	SHORT	SHORT
DRAW. FOLD BACK	LOW	2C	2C	2C	2C	2C	2C	2C	2C	2C	2C
	HIGH	4G	4G	4G	4G	4G	4G	4G	4G	4G	4G
SPLIT ON/OFF		OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
SPLIT POINT KEY		2B	2B	2B	2B	2B	2B	2B	2B	2B	2B
LOWER OCTAVE		NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
LOWER CANCEL		OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
OVER DRIVE		OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
LESLIE		ON	ON	ON	ON	ON	ON	ON	ON	ON	ON
LESLIE	SLOW SPEED	30rpm	30rpm	30rpm	30rpm	30rpm	30rpm	30rpm	30rpm	30rpm	30rpm
	FAST SPEED	388rpm	388rpm	388rpm	388rpm	388rpm	388rpm	388rpm	388rpm	388rpm	388rpm
	RISE TIME	5.0 s	5.0 s	5.0 s	5.0 s	5.0 s	5.0 s	5.0 s	5.0 s	5.0 s	5.0 s
	FALL TIME	3.5 s	3.5 s	3.5 s	3.5 s	3.5 s	3.5 s	3.5 s	3.5 s	3.5 s	3.5 s

CHORUS SINGLE		20 **SILKY**	21 **MYSTIC**	22 **HUSKY**	23 **GROOVE**	24 **GROOVY**	25 **SOUL**	26 **FUNKY**	27 **BURNING**	28 **PURPLE**	29 **MAX POWER**
DRAWBAR REGIST	UPPER LOWER	88 0000 008 85 8000 000	84 0000 036 85 8000 000	80 0000 888 85 8000 000	80 8000 888 85 8000 000	80 8000 444 85 8000 000	88 8000 444 85 8000 000	88 8000 888 85 8000 000	88 8800 888 85 8000 000	88 8884 444 85 8000 000	86 7856 567 85 8000 000
ORGAN SOLO		OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
PERCUSSION	2nd 3rd	OFF OFF	OFF OFF	OFF OFF	OFF OFF	OFF OFF	OFF OFF	OFF OFF	OFF OFF	OFF OFF	OFF OFF
VIBRATO		ON	ON	ON	ON	ON	ON	ON	ON	ON	ON
LESLIE S/F		ON	ON	ON	ON	ON	ON	ON	ON	ON	ON
VIBRATO MODE		C1	C1	C1	C1	C1	C1	C1	C1	C1	C1
VIBRATO SPEED		NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
VIBRATO	UPPER LOWER	ON OFF	ON OFF	ON OFF	ON OFF	ON OFF	ON OFF	ON OFF	ON OFF	ON OFF	ON OFF
PERCUSSION DECAY		F	F	F	F	F	F	F	F	F	F
PERCUSSION SOFT		ON	ON	ON	ON	ON	ON	ON	ON	ON	ON
PERCUSSION TOUCH		ON	ON	ON	ON	ON	ON	ON	ON	ON	ON
PERCUSSION VELOCITY		OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
PERCUSSION LEVEL		16	16	16	16	16	16	16	16	16	16
PERC. DRAWBAR CANCEL		ON	ON	ON	ON	ON	ON	ON	ON	ON	ON
PERC. KEY TRACK		OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
DRAW. VOICING	UPPER LOWER	B-TYPE B-TYPE	B-TYPE B-TYPE	B-TYPE B-TYPE	B-TYPE B-TYPE	B-TYPE B-TYPE	B-TYPE B-TYPE	B-TYPE B-TYPE	B-TYPE B-TYPE	B-TYPE B-TYPE	B-TYPE B-TYPE
DRAW. ATTACK	UPPER LOWER	NORM CLICK NORM CLICK	NORM CLICK NORM CLICK	NORM CLICK NORM CLICK	NORM CLICK NORM CLICK	NORM CLICK NORM CLICK	NORM CLICK NORM CLICK	NORM CLICK NORM CLICK	NORM CLICK NORM CLICK	NORM CLICK NORM CLICK	NORM CLICK NORM CLICK
DRAW. SUSTAIN	UPPER LOWER	OFF OFF	OFF OFF	OFF OFF	OFF OFF	OFF OFF	OFF OFF	OFF OFF	OFF OFF	OFF OFF	OFF OFF
DRAW. SUS. LENGTH	UPPER LOWER	SHORT SHORT	SHORT SHORT	SHORT SHORT	SHORT SHORT	SHORT SHORT	SHORT SHORT	SHORT SHORT	SHORT SHORT	SHORT SHORT	SHORT SHORT
DRAW. FOLD BACK	LOW HIGH	2C 4G	2C 4G	2C 4G	2C 4G	2C 4G	2C 4G	2C 4G	2C 4G	2C 4G	2C 4G
SPLIT ON/OFF		OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
SPLIT POINT KEY		2B	2B	2B	2B	2B	2B	2B	2B	2B	2B
LOWER OCTAVE		NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
LOWER CANCEL		OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
OVER DRIVE		OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
LESLIE		ON	ON	ON	ON	ON	ON	ON	ON	ON	ON
LESLIE	SLOW SPEED FAST SPEED RISE TIME FALL TIME	30rpm 388rpm 5.0 s 3.5 s	30rpm 388rpm 5.0 s 3.5 s	30rpm 388rpm 5.0 s 3.5 s	30rpm 388rpm 5.0 s 3.5 s	30rpm 388rpm 5.0 s 3.5 s	30rpm 388rpm 5.0 s 3.5 s	30rpm 388rpm 5.0 s 3.5 s	30rpm 388rpm 5.0 s 3.5 s	30rpm 388rpm 5.0 s 3.5 s	30rpm 388rpm 5.0 s 3.5 s

PERCUSSION SINGLE		30 WHISTLER	31 SCOTT	32 STAFF	33 KEITH	34 JIMMY	35 2+3	36 PERCUSS 2	37 PERCUSS 23	38 CHERIE	39 HI
DRAWBAR REGIST	UPPER LOWER	00 0000 000 85 8000 000	88 8000 000 85 8000 000	88 8000 000 85 8000 000	88 8800 000 85 8000 000	88 8000 000 85 8000 000	88 8000 000 85 8000 000	08 8000 000 85 8000 000	08 8000 000 85 8000 000	08 0000 088 85 8000 000	08 8000 088 85 8000 000
ORGAN SOLO		OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
PERCUSSION	2nd 3rd	ON OFF	ON OFF	ON OFF	OFF ON	OFF ON	ON ON	ON OFF	ON ON	ON ON	ON ON
VIBRATO		OFF	OFF	ON	OFF	ON	ON	ON	ON	ON	ON
LESLIE S/F		OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
VIBRATO MODE		C1	C1	C2	C1	C3	C1	C3	C1	C1	C1
VIBRATO SPEED		NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
VIBRATO	UPPER LOWER	ON OFF	ON OFF	ON OFF	ON OFF	ON OFF	ON OFF	ON OFF	ON OFF	ON OFF	ON OFF
PERCUSSION DECAY		S	F	S	S	S	S	S	S	S	S
PERCUSSION SOFT		OFF	OFF	ON	OFF	ON	OFF	OFF	OFF	OFF	OFF
PERCUSSION TOUCH		ON	ON	ON	ON	ON	ON	ON	ON	ON	ON
PERCUSSION VELOCITY		OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
PERCUSSION LEVEL		16	16	16	16	16	16	16	16	16	16
PERC. DRAWBAR CANCEL		ON	ON	ON	ON	ON	ON	ON	ON	ON	ON
PERC. KEY TRACK		OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
DRAW. VOICING	UPPER LOWER	B-TYPE B-TYPE	B-TYPE B-TYPE	B-TYPE B-TYPE	B-TYPE B-TYPE	B-TYPE B-TYPE	B-TYPE B-TYPE	B-TYPE B-TYPE	B-TYPE B-TYPE	B-TYPE B-TYPE	B-TYPE B-TYPE
DRAW. ATTACK	UPPER LOWER	NORM CLICK NORM CLICK	NORM CLICK NORM CLICK	NORM CLICK NORM CLICK	NORM CLICK NORM CLICK	NORM CLICK NORM CLICK	NORM CLICK NORM CLICK	NORM CLICK NORM CLICK	NORM CLICK NORM CLICK	NORM CLICK NORM CLICK	NORM CLICK NORM CLICK
DRAW. SUSTAIN	UPPER LOWER	OFF OFF	OFF OFF	OFF OFF	OFF OFF	OFF OFF	OFF OFF	OFF OFF	OFF OFF	OFF OFF	OFF OFF
DRAW. SUS. LENGTH	UPPER LOWER	SHORT SHORT	SHORT SHORT	SHORT SHORT	SHORT SHORT	SHORT SHORT	SHORT SHORT	SHORT SHORT	SHORT SHORT	SHORT SHORT	SHORT SHORT
DRAW. FOLD BACK	LOW HIGH	2C 4G	2C 4G	2C 4G	2C 4G	2C 4G	2C 4G	2C 4G	2C 4G	2C 4G	2C 4G
SPLIT ON/OFF		OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
SPLIT POINT KEY		2B	2B	2B	2B	2B	2B	2B	2B	2B	2B
LOWER OCTAVE		NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
LOWER CANCEL		OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
OVER DRIVE		OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
LESLIE		ON	ON	ON	ON	ON	ON	ON	ON	ON	ON
LESLIE	SLOW SPEED FAST SPEED RISE TIME FALL TIME	30rpm 388rpm 5.0 s 3.5 s	30rpm 388rpm 5.0 s 3.5 s	30rpm 388rpm 5.0 s 3.5 s	30rpm 388rpm 5.0 s 3.5 s	30rpm 388rpm 5.0 s 3.5 s	30rpm 388rpm 5.0 s 3.5 s	30rpm 388rpm 5.0 s 3.5 s	30rpm 388rpm 5.0 s 3.5 s	30rpm 388rpm 5.0 s 3.5 s	30rpm 388rpm 5.0 s 3.5 s

PIPES SINGLE		**40** **FLUTE 4**	**41** **FLUTE 2**	**42** **FLÖTE**	**43** **WOOD**	**44** **POSITIV I**	**45** **POSITIV II**	**46** **POSITIV III**	**47** **REED**	**48** **FULL 1**	**49** **FULL 2**
DRAWBAR REGIST	UPPER LOWER	00 2800 000 00 5200 000	00 0008 000 00 6001 000	00 2700 050 00 6001 000	00 0800 300 00 6001 000	00 3824 012 00 6201 000	00 3826 023 00 6020 000	00 4828 133 00 6013 000	00 3473 133 00 4632 000	32 4836 056 00 5723 001	32 3473 244 00 5723 011
ORGAN SOLO		OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
PERCUSSION	2nd 3rd	OFF OFF	OFF OFF	OFF OFF	OFF OFF	OFF OFF	OFF OFF	OFF OFF	OFF OFF	OFF OFF	OFF OFF
VIBRATO		OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
LESLIE S/F		OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
VIBRATO MODE		V1	V1	V1	V1	V1	V1	V1	V1	V1	V1
VIBRATO SPEED		SLOW	SLOW	SLOW	SLOW	SLOW	SLOW	SLOW	SLOW	SLOW	SLOW
VIBRATO	UPPER LOWER	ON OFF	ON OFF	ON OFF	ON OFF	ON OFF	ON OFF	ON OFF	ON OFF	ON OFF	ON OFF
PERCUSSION DECAY		S	S	S	S	S	S	S	S	S	S
PERCUSSION SOFT		OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
PERCUSSION TOUCH		ON	ON	ON	ON	ON	ON	ON	ON	ON	ON
PERCUSSION VELOCITY		OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
PERCUSSION LEVEL		16	16	16	16	16	16	16	16	16	16
PERC. DRAWBAR CANCEL		ON	ON	ON	ON	ON	ON	ON	ON	ON	ON
PERC. KEY TRACK		OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
DRAW. VOICING	UPPER LOWER	BRITE BRITE	BRITE BRITE	BRITE BRITE	BRITE BRITE	BRITE BRITE	BRITE BRITE	BRITE BRITE	BRITE BRITE	BRITE BRITE	BRITE BRITE
DRAW. ATTACK	UPPER LOWER	NORM CLICK NORM CLICK	NO CLICK NO CLICK	SLOW ATTACK SLOW ATTACK	NO CLICK NO CLICK	SLOW ATTACK SLOW ATTACK	SLOW ATTACK SLOW ATTACK	SLOW ATTACK SLOW ATTACK	SLOW ATTACK SLOW ATTACK	SLOW ATTACK SLOW ATTACK	SLOW ATTACK SLOW ATTACK
DRAW. SUSTAIN	UPPER LOWER	OFF OFF	OFF OFF	OFF OFF	OFF OFF	OFF OFF	OFF OFF	OFF OFF	OFF OFF	OFF OFF	OFF OFF
DRAW. SUS. LENGTH	UPPER LOWER	SHORT SHORT	SHORT SHORT	SHORT SHORT	SHORT SHORT	SHORT SHORT	SHORT SHORT	SHORT SHORT	SHORT SHORT	SHORT SHORT	SHORT SHORT
DRAW. FOLD BACK	LOW HIGH	2C 5C	1C 5C	1C 5C	1C 5C	1C 5C	1C 5C	1C 5C	1C 5C	1C 5C	1C 5C
SPLIT ON/OFF		OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
SPLIT POINT KEY		2B	2B	2B	2B	2B	2B	2B	2B	2B	2B
LOWER OCTAVE		NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
LOWER CANCEL		OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
OVER DRIVE		OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
LESLIE		ON	ON	ON	ON	ON	ON	ON	ON	ON	ON
LESLIE	SLOW SPEED FAST SPEED RISE TIME FALL TIME	30rpm 388rpm 5.0 s 3.5 s	30rpm 388rpm 5.0 s 3.5 s	30rpm 388rpm 5.0 s 3.5 s	30rpm 388rpm 5.0 s 3.5 s	30rpm 388rpm 5.0 s 3.5 s	30rpm 388rpm 5.0 s 3.5 s	30rpm 388rpm 5.0 s 3.5 s	30rpm 388rpm 5.0 s 3.5 s	30rpm 388rpm 5.0 s 3.5 s	30rpm 388rpm 5.0 s 3.5 s

FLUTES SPLIT		50 ****	51 SINE	52 ACCOMP	53 TIBIA	54 BRILL	55 WALTER	56 JUICY	57 TIBIAS	58 TIBIA CHORUS	59 FULL TIBIAS
DRAWBAR REGIST	UPPER LOWER	00 8000 000 80 8000 000	00 8000 000 80 0800 000	00 8600 000 80 0800 000	00 8402 000 80 0800 000	00 8000 004 80 0800 000	80 0800 000 80 0800 000	80 0800 006 80 0800 000	80 4604 004 80 0800 000	80 6804 003 80 0800 000	80 6806 008 80 0800 000
ORGAN SOLO		OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
PERCUSSION	2nd 3rd	OFF OFF	OFF OFF	OFF OFF	OFF OFF	OFF OFF	OFF OFF	OFF OFF	OFF OFF	OFF OFF	OFF OFF
VIBRATO		OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
LESLIE S/F		OFF	OFF	OFF	OFF	OFF	OFF	ON	ON	ON	ON
VIBRATO MODE		V2	V2	V2	V2	V2	V2	V2	V2	V2	V2
VIBRATO SPEED		NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
VIBRATO	UPPER LOWER	ON OFF	ON OFF	ON OFF	ON OFF	ON OFF	ON OFF	ON OFF	ON OFF	ON OFF	ON OFF
PERCUSSION DECAY		S	S	S	S	S	S	S	S	S	S
PERCUSSION SOFT		ON	OFF	ON	ON	ON	ON	ON	ON	ON	ON
PERCUSSION TOUCH		ON	ON	ON	ON	ON	ON	ON	ON	ON	ON
PERCUSSION VELOCITY		OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
PERCUSSION LEVEL		16	16	16	16	16	16	16	16	16	16
PERC. DRAWBAR CANCEL		ON	ON	ON	ON	ON	ON	ON	ON	ON	ON
PERC. KEY TRACK		OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
DRAW. VOICING	UPPER LOWER	MELLOW MELLOW	MELLOW MELLOW	MELLOW MELLOW	MELLOW MELLOW	MELLOW MELLOW	MELLOW MELLOW	MELLOW MELLOW	MELLOW MELLOW	MELLOW MELLOW	MELLOW MELLOW
DRAW. ATTACK	UPPER LOWER	NO CLICK NO CLICK	NORM CLICK NORM CLICK	NORM CLICK NORM CLICK	NORM CLICK NORM CLICK	NORM CLICK NORM CLICK	NORM CLICK NORM CLICK	NORM CLICK NORM CLICK	NORM CLICK NORM CLICK	NORM CLICK NORM CLICK	NORM CLICK NORM CLICK
DRAW. SUSTAIN	UPPER LOWER	OFF OFF	OFF OFF	OFF OFF	OFF OFF	OFF OFF	OFF OFF	OFF OFF	OFF OFF	OFF OFF	OFF OFF
DRAW. SUS. LENGTH	UPPER LOWER	SHORT SHORT	SHORT SHORT	SHORT SHORT	SHORT SHORT	SHORT SHORT	SHORT SHORT	SHORT SHORT	SHORT SHORT	SHORT SHORT	SHORT SHORT
DRAW. FOLD BACK	LOW HIGH	2C 4G	2C 4G	2C 4G	2C 4G	2C 4G	2C 4G	2C 4G	2C 4G	2C 4G	2C 4G
SPLIT ON/OFF		OFF	ON	ON	ON	ON	ON	ON	ON	ON	ON
SPLIT POINT KEY		2B	2B	2B	2B	2B	2B	2B	2B	2B	2B
LOWER OCTAVE		NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
LOWER CANCEL		OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
OVER DRIVE		OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
LESLIE		ON	ON	ON	ON	ON	ON	ON	ON	ON	ON
LESLIE	SLOW SPEED FAST SPEED RISE TIME FALL TIME	30rpm 388rpm 5.0 s 3.5 s	30rpm 388rpm 5.0 s 3.5 s	30rpm 388rpm 5.0 s 3.5 s	30rpm 388rpm 5.0 s 3.5 s	30rpm 388rpm 5.0 s 3.5 s	30rpm 388rpm 5.0 s 3.5 s	30rpm 388rpm 5.0 s 3.5 s	30rpm 388rpm 5.0 s 3.5 s	30rpm 388rpm 5.0 s 3.5 s	30rpm 388rpm 5.0 s 3.5 s

SOLOS SPLIT		60 SUPER DRY	61 BLUE	62 BLUESY	63 DRY	64 WET	65 POWER DRIVE	66 BLUE 8	67 DRY 8	68 DUNE	69 SOLID
DRAWBAR REGIST	UPPER LOWER	88 8000 000 85 8000 000	88 8000 000 85 8000 000	88 8000 006 85 8000 000	88 8800 000 85 8000 000	88 8806 000 85 8000 000	88 8880 000 85 8000 000	00 8880 000 85 8000 000	00 8888 000 85 8000 000	08 8800 000 85 8000 000	08 8800 006 85 8000 000
ORGAN SOLO		OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
PERCUSSION	2nd 3rd	OFF OFF	OFF OFF	OFF OFF	OFF OFF	OFF OFF	OFF OFF	OFF OFF	OFF OFF	OFF OFF	OFF OFF
VIBRATO		OFF	ON	ON	OFF	ON	OFF	ON	ON	ON	ON
LESLIE S/F		OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
VIBRATO MODE		C1	C1	C3	C1	C3	C2	C2	C2	C2	C3
VIBRATO SPEED		NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
VIBRATO	UPPER LOWER	ON OFF	ON OFF	ON OFF	ON OFF	ON OFF	ON OFF	ON OFF	ON OFF	ON OFF	ON OFF
PERCUSSION DECAY		F	F	F	F	F	F	F	F	F	F
PERCUSSION SOFT		ON	ON	ON	ON	ON	ON	ON	ON	ON	ON
PERCUSSION TOUCH		ON	ON	ON	ON	ON	ON	ON	ON	ON	ON
PERCUSSION VELOCITY		OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
PERCUSSION LEVEL		16	16	16	16	16	16	16	16	16	16
PERC. DRAWBAR CANCEL		ON	ON	ON	ON	ON	ON	ON	ON	ON	ON
PERC. KEY TRACK		OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
DRAW. VOICING	UPPER LOWER	B-TYPE B-TYPE	B-TYPE B-TYPE	B-TYPE B-TYPE	B-TYPE B-TYPE	B-TYPE B-TYPE	B-TYPE B-TYPE	B-TYPE B-TYPE	B-TYPE B-TYPE	B-TYPE B-TYPE	B-TYPE B-TYPE
DRAW. ATTACK	UPPER LOWER	NORM CLICK NORM CLICK	NORM CLICK NORM CLICK	NORM CLICK NORM CLICK	NORM CLICK NORM CLICK	NORM CLICK NORM CLICK	NORM CLICK NORM CLICK	NORM CLICK NORM CLICK	NORM CLICK NORM CLICK	NORM CLICK NORM CLICK	NORM CLICK NORM CLICK
DRAW. SUSTAIN	UPPER LOWER	OFF OFF	OFF OFF	OFF OFF	OFF OFF	OFF OFF	OFF OFF	OFF OFF	OFF OFF	OFF OFF	OFF OFF
DRAW. SUS. LENGTH	UPPER LOWER	SHORT SHORT	SHORT SHORT	SHORT SHORT	SHORT SHORT	SHORT SHORT	SHORT SHORT	SHORT SHORT	SHORT SHORT	SHORT SHORT	SHORT SHORT
DRAW. FOLD BACK	LOW HIGH	2C 4G	2C 4G	2C 4G	2C 4G	2C 4G	2C 4G	2C 4G	2C 4G	2C 4G	2C 4G
SPLIT ON/OFF		ON	ON	ON	ON	ON	ON	ON	ON	ON	ON
SPLIT POINT KEY		2B	2B	2B	2B	2B	2B	2B	2B	2B	2B
LOWER OCTAVE		NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
LOWER CANCEL		OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
OVER DRIVE		OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
LESLIE		ON	ON	ON	ON	ON	ON	ON	ON	ON	ON
LESLIE	SLOW SPEED FAST SPEED RISE TIME FALL TIME	30rpm 388rpm 5.0 s 3.5 s	30rpm 388rpm 5.0 s 3.5 s	30rpm 388rpm 5.0 s 3.5 s	30rpm 388rpm 5.0 s 3.5 s	30rpm 388rpm 5.0 s 3.5 s	30rpm 388rpm 5.0 s 3.5 s	30rpm 388rpm 5.0 s 3.5 s	30rpm 388rpm 5.0 s 3.5 s	30rpm 388rpm 5.0 s 3.5 s	30rpm 388rpm 5.0 s 3.5 s

CHORUS SPLIT		70 SILKY	71 MYSTIC	72 HUSKY	73 GROOVE	74 GROOVY	75 SOUL	76 FUNKY	77 BURNING	78 PURPLE	79 MAX POWER
DRAWBAR REGIST	UPPER LOWER	88 0000 008 85 8000 000	84 0000 036 85 8000 000	80 0000 888 85 8000 000	80 8000 888 85 8000 000	80 8000 444 85 8000 000	88 8000 444 85 8000 000	88 8000 888 85 8000 000	88 8800 888 85 8000 000	88 8884 444 85 8000 000	86 7856 567 85 8000 000
ORGAN SOLO		OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
PERCUSSION	2nd 3rd	OFF OFF	OFF OFF	OFF OFF	OFF OFF	OFF OFF	OFF OFF	OFF OFF	OFF OFF	OFF OFF	OFF OFF
VIBRATO		ON	ON	ON	ON	ON	ON	ON	ON	ON	ON
LESLIE S/F		ON	ON	ON	ON	ON	ON	ON	ON	ON	ON
VIBRATO MODE		C1	C1	C1	C1	C1	C1	C1	C1	C1	C1
VIBRATO SPEED		NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
VIBRATO	UPPER LOWER	ON OFF	ON OFF	ON OFF	ON OFF	ON OFF	ON OFF	ON OFF	ON OFF	ON OFF	ON OFF
PERCUSSION DECAY		F	F	F	F	F	F	F	F	F	F
PERCUSSION SOFT		ON	ON	ON	ON	ON	ON	ON	ON	ON	ON
PERCUSSION TOUCH		ON	ON	ON	ON	ON	ON	ON	ON	ON	ON
PERCUSSION VELOCITY		OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
PERCUSSION LEVEL		16	16	16	16	16	16	16	16	16	16
PERC. DRAWBAR CANCEL		ON	ON	ON	ON	ON	ON	ON	ON	ON	ON
PERC. KEY TRACK		OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
DRAW. VOICING	UPPER LOWER	B-TYPE B-TYPE	B-TYPE B-TYPE	B-TYPE B-TYPE	B-TYPE B-TYPE	B-TYPE B-TYPE	B-TYPE B-TYPE	B-TYPE B-TYPE	B-TYPE B-TYPE	B-TYPE B-TYPE	B-TYPE B-TYPE
DRAW. ATTACK	UPPER LOWER	NORM CLICK NORM CLICK	NORM CLICK NORM CLICK	NORM CLICK NORM CLICK	NORM CLICK NORM CLICK	NORM CLICK NORM CLICK	NORM CLICK NORM CLICK	NORM CLICK NORM CLICK	NORM CLICK NORM CLICK	NORM CLICK NORM CLICK	NORM CLICK NORM CLICK
DRAW. SUSTAIN	UPPER LOWER	OFF OFF	OFF OFF	OFF OFF	OFF OFF	OFF OFF	OFF OFF	OFF OFF	OFF OFF	OFF OFF	OFF OFF
DRAW. SUS. LENGTH	UPPER LOWER	SHORT SHORT	SHORT SHORT	SHORT SHORT	SHORT SHORT	SHORT SHORT	SHORT SHORT	SHORT SHORT	SHORT SHORT	SHORT SHORT	SHORT SHORT
DRAW. FOLD BACK	LOW HIGH	2C 4G	2C 4G	2C 4G	2C 4G	2C 4G	2C 4G	2C 4G	2C 4G	2C 4G	2C 4G
SPLIT ON/OFF		ON	ON	ON	ON	ON	ON	ON	ON	ON	ON
SPLIT POINT KEY		2B	2B	2B	2B	2B	2B	2B	2B	2B	2B
LOWER OCTAVE		NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
LOWER CANCEL		OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
OVER DRIVE		OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
LESLIE		ON	ON	ON	ON	ON	ON	ON	ON	ON	ON
LESLIE	SLOW SPEED FAST SPEED RISE TIME FALL TIME	30rpm 388rpm 5.0 s 3.5 s	30rpm 388rpm 5.0 s 3.5 s	30rpm 388rpm 5.0 s 3.5 s	30rpm 388rpm 5.0 s 3.5 s	30rpm 388rpm 5.0 s 3.5 s	30rpm 388rpm 5.0 s 3.5 s	30rpm 388rpm 5.0 s 3.5 s	30rpm 388rpm 5.0 s 3.5 s	30rpm 388rpm 5.0 s 3.5 s	30rpm 388rpm 5.0 s 3.5 s

PERCUSSION SPLIT		80 WHISTLER	81 SCOTT	82 STAFF	83 KEITH	84 JIMMY	85 2+3	86 PERCUSS 2	87 PERCUSS 23	88 CHERIE	89 HI
DRAWBAR REGIST	UPPER LOWER	00 0000 000 85 8000 000	88 8000 000 85 8000 000	88 8000 000 85 8000 000	88 8800 000 85 8000 000	88 8000 000 85 8000 000	88 8000 000 85 8000 000	08 8000 000 85 8000 000	08 8000 000 85 8000 000	08 0000 088 85 8000 000	08 8000 088 85 8000 000
ORGAN SOLO		OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
PERCUSSION	2nd 3rd	ON OFF	ON OFF	ON OFF	OFF ON	OFF ON	ON ON	ON OFF	ON ON	ON ON	ON ON
VIBRATO		OFF	OFF	ON	OFF	ON	ON	ON	ON	ON	ON
LESLIE S/F		OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
VIBRATO MODE		C1	C1	C2	C1	C3	C1	C3	C1	C1	C1
VIBRATO SPEED		NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
VIBRATO	UPPER LOWER	ON OFF	ON OFF	ON OFF	ON OFF	ON OFF	ON OFF	ON OFF	ON OFF	ON OFF	ON OFF
PERCUSSION DECAY		S	F	S	S	S	S	S	S	S	S
PERCUSSION SOFT		OFF	OFF	ON	OFF	ON	OFF	OFF	OFF	OFF	OFF
PERCUSSION TOUCH		ON	ON	ON	ON	ON	ON	ON	ON	ON	ON
PERCUSSION VELOCITY		OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
PERCUSSION LEVEL		16	16	16	16	16	16	16	16	16	16
PERC. DRAWBAR CANCEL		ON	ON	ON	ON	ON	ON	ON	ON	ON	ON
PERC. KEY TRACK		OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
DRAW. VOICING	UPPER LOWER	B-TYPE B-TYPE	B-TYPE B-TYPE	B-TYPE B-TYPE	B-TYPE B-TYPE	B-TYPE B-TYPE	B-TYPE B-TYPE	B-TYPE B-TYPE	B-TYPE B-TYPE	B-TYPE B-TYPE	B-TYPE B-TYPE
DRAW. ATTACK	UPPER LOWER	NORM CLICK NORM CLICK	NORM CLICK NORM CLICK	NORM CLICK NORM CLICK	NORM CLICK NORM CLICK	NORM CLICK NORM CLICK	NORM CLICK NORM CLICK	NORM CLICK NORM CLICK	NORM CLICK NORM CLICK	NORM CLICK NORM CLICK	NORM CLICK NORM CLICK
DRAW. SUSTAIN	UPPER LOWER	OFF OFF	OFF OFF	OFF OFF	OFF OFF	OFF OFF	OFF OFF	OFF OFF	OFF OFF	OFF OFF	OFF OFF
DRAW. SUS. LENGTH	UPPER LOWER	SHORT SHORT	SHORT SHORT	SHORT SHORT	SHORT SHORT	SHORT SHORT	SHORT SHORT	SHORT SHORT	SHORT SHORT	SHORT SHORT	SHORT SHORT
DRAW. FOLD BACK	LOW HIGH	2C 4G	2C 4G	2C 4G	2C 4G	2C 4G	2C 4G	2C 4G	2C 4G	2C 4G	2C 4G
SPLIT ON/OFF		ON	ON	ON	ON	ON	ON	ON	ON	ON	ON
SPLIT POINT KEY		2B	2B	2B	2B	2B	2B	2B	2B	2B	2B
LOWER OCTAVE		NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
LOWER CANCEL		OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
OVER DRIVE		OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
LESLIE		ON	ON	ON	ON	ON	ON	ON	ON	ON	ON
LESLIE	SLOW SPEED FAST SPEED RISE TIME FALL TIME	30rpm 388rpm 5.0 s 3.5 s	30rpm 388rpm 5.0 s 3.5 s	30rpm 388rpm 5.0 s 3.5 s	30rpm 388rpm 5.0 s 3.5 s	30rpm 388rpm 5.0 s 3.5 s	30rpm 388rpm 5.0 s 3.5 s	30rpm 388rpm 5.0 s 3.5 s	30rpm 388rpm 5.0 s 3.5 s	30rpm 388rpm 5.0 s 3.5 s	30rpm 388rpm 5.0 s 3.5 s

PIPES SPLIT		90 FLUTE 4	91 FLUTE 2	92 FLÖTE	93 WOOD	94 POSITIV I	95 POSITIV II	96 POSITIV III	97 REED	98 FULL 1	99 FULL 2
DRAWBAR REGIST	UPPER LOWER	00 2800 000 00 5200 000	00 0008 000 00 6001 000	00 2700 050 00 6001 000	00 0800 300 00 6001 000	00 3824 012 00 6201 000	00 3826 023 00 6020 000	00 4828 133 00 6013 000	00 3473 133 00 4632 000	32 4836 056 00 5723 001	32 3473 244 00 5723 011
ORGAN SOLO		OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
PERCUSSION	2nd 3rd	OFF OFF	OFF OFF	OFF OFF	OFF OFF	OFF OFF	OFF OFF	OFF OFF	OFF OFF	OFF OFF	OFF OFF
VIBRATO		OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
LESLIE S/F		OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
VIBRATO MODE		V1	V1	V1	V1	V1	V1	V1	V1	V1	V1
VIBRATO SPEED		SLOW	SLOW	SLOW	SLOW	SLOW	SLOW	SLOW	SLOW	SLOW	SLOW
VIBRATO	UPPER LOWER	ON OFF	ON OFF	ON OFF	ON OFF	ON OFF	ON OFF	ON OFF	ON OFF	ON OFF	ON OFF
PERCUSSION DECAY		S	S	S	S	S	S	S	S	S	S
PERCUSSION SOFT		OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
PERCUSSION TOUCH		ON	ON	ON	ON	ON	ON	ON	ON	ON	ON
PERCUSSION VELOCITY		OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
PERCUSSION LEVEL		16	16	16	16	16	16	16	16	16	16
PERC. DRAWBAR CANCEL		ON	ON	ON	ON	ON	ON	ON	ON	ON	ON
PERC. KEY TRACK		OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
DRAW. VOICING	UPPER LOWER	BRITE BRITE	BRITE BRITE	BRITE BRITE	BRITE BRITE	BRITE BRITE	BRITE BRITE	BRITE BRITE	BRITE BRITE	BRITE BRITE	BRITE BRITE
DRAW. ATTACK	UPPER LOWER	NORM CLICK NORM CLICK	NO CLICK NO CLICK	SLOW ATTACK SLOW ATTACK	NO CLICK NO CLICK	SLOW ATTACK SLOW ATTACK	SLOW ATTACK SLOW ATTACK	SLOW ATTACK SLOW ATTACK	SLOW ATTACK SLOW ATTACK	SLOW ATTACK SLOW ATTACK	SLOW ATTACK SLOW ATTACK
DRAW. SUSTAIN	UPPER LOWER	OFF OFF	OFF OFF	OFF OFF	OFF OFF	OFF OFF	OFF OFF	OFF OFF	OFF OFF	OFF OFF	OFF OFF
DRAW. SUS. LENGTH	UPPER LOWER	SHORT SHORT	SHORT SHORT	SHORT SHORT	SHORT SHORT	SHORT SHORT	SHORT SHORT	SHORT SHORT	SHORT SHORT	SHORT SHORT	SHORT SHORT
DRAW. FOLD BACK	LOW HIGH	2C 5C	1C 5C	1C 5C	1C 5C	1C 5C	1C 5C	1C 5C	1C 5C	1C 5C	1C 5C
SPLIT ON/OFF		ON	ON	ON	ON	ON	ON	ON	ON	ON	ON
SPLIT POINT KEY		2B	2B	2B	2B	2B	2B	2B	2B	2B	2B
LOWER OCTAVE		NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
LOWER CANCEL		OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
OVER DRIVE		OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
LESLIE		ON	ON	ON	ON	ON	ON	ON	ON	ON	ON
LESLIE	SLOW SPEED FAST SPEED RISE TIME FALL TIME	30rpm 388rpm 5.0 s 3.5 s	30rpm 388rpm 5.0 s 3.5 s	30rpm 388rpm 5.0 s 3.5 s	30rpm 388rpm 5.0 s 3.5 s	30rpm 388rpm 5.0 s 3.5 s	30rpm 388rpm 5.0 s 3.5 s	30rpm 388rpm 5.0 s 3.5 s	30rpm 388rpm 5.0 s 3.5 s	30rpm 388rpm 5.0 s 3.5 s	30rpm 388rpm 5.0 s 3.5 s

BASIC SINGLE		100 FLUTE 8	101 SINE	102 FLUTE CHORUS	103 DIAPASON I	104 DIAPASON II	105 STRING I	106 STRING II	107 REED I	108 REED II	109 CLARINET
DRAWBAR REGIST	UPPER LOWER	00 8400 000 00 6000 000	00 8402 000 00 7400 000	00 8604 002 00 7400 000	00 7644 321 00 7400 000	00 7534 211 00 7400 000	00 2333 211 00 7400 000	00 3443 222 00 7400 000	00 2383 211 00 7400 000	00 3484 321 00 7400 000	00 8080 800 00 6000 000
ORGAN SOLO		OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
PERCUSSION	2nd 3rd	OFF OFF	OFF OFF	OFF OFF	OFF OFF	OFF OFF	OFF OFF	OFF OFF	OFF OFF	OFF OFF	OFF OFF
VIBRATO		OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
LESLIE S/F		OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
VIBRATO MODE		V1	V1	V1	V1	V1	V1	V1	V1	V1	V1
VIBRATO SPEED		NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
VIBRATO	UPPER LOWER	ON OFF	ON OFF	ON OFF	ON OFF	ON OFF	ON OFF	ON OFF	ON OFF	ON OFF	ON OFF
PERCUSSION DECAY		S	S	S	S	S	S	S	S	S	S
PERCUSSION SOFT		OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
PERCUSSION TOUCH		ON	ON	ON	ON	ON	ON	ON	ON	ON	ON
PERCUSSION VELOCITY		OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
PERCUSSION LEVEL		16	16	16	16	16	16	16	16	16	16
PERC. DRAWBAR CANCEL		ON	ON	ON	ON	ON	ON	ON	ON	ON	ON
PERC. KEY TRACK		OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
DRAW. VOICING	UPPER LOWER	MELLOW MELLOW	MELLOW MELLOW	MELLOW MELLOW	MELLOW MELLOW	MELLOW MELLOW	MELLOW MELLOW	MELLOW MELLOW	MELLOW MELLOW	MELLOW MELLOW	MELLOW MELLOW
DRAW. ATTACK	UPPER LOWER	NO CLICK NO CLICK	NO CLICK NO CLICK	NO CLICK NO CLICK	NO CLICK NO CLICK	NO CLICK NO CLICK	NO CLICK NO CLICK	NO CLICK NO CLICK	NO CLICK NO CLICK	NO CLICK NO CLICK	NO CLICK NO CLICK
DRAW. SUSTAIN	UPPER LOWER	OFF OFF	OFF OFF	OFF OFF	OFF OFF	OFF OFF	OFF OFF	OFF OFF	OFF OFF	OFF OFF	OFF OFF
DRAW. SUS. LENGTH	UPPER LOWER	SHORT SHORT	SHORT SHORT	SHORT SHORT	SHORT SHORT	SHORT SHORT	SHORT SHORT	SHORT SHORT	SHORT SHORT	SHORT SHORT	SHORT SHORT
DRAW. FOLD BACK	LOW HIGH	2C 4G	2C 4G	2C 4G	2C 4G	2C 4G	2C 4G	2C 4G	2C 4G	2C 4G	2C 4G
SPLIT ON/OFF		OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
SPLIT POINT KEY		2B	2B	2B	2B	2B	2B	2B	2B	2B	2B
LOWER OCTAVE		NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
LOWER CANCEL		OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
OVER DRIVE		OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
LESLIE		ON	ON	ON	ON	ON	ON	ON	ON	ON	ON
LESLIE	SLOW SPEED FAST SPEED RISE TIME FALL TIME	30rpm 388rpm 5.0 s 3.5 s	30rpm 388rpm 5.0 s 3.5 s	30rpm 388rpm 5.0 s 3.5 s	30rpm 388rpm 5.0 s 3.5 s	30rpm 388rpm 5.0 s 3.5 s	30rpm 388rpm 5.0 s 3.5 s	30rpm 388rpm 5.0 s 3.5 s	30rpm 388rpm 5.0 s 3.5 s	30rpm 388rpm 5.0 s 3.5 s	30rpm 388rpm 5.0 s 3.5 s

USER VOICE		**110** **120**	**111** **121**	**112** **122**	**113** **123**	**114** **124**	**115** **125**	**116** **126**	**117** **127**	**118** **128**	**119**
DRAWBAR REGIST	UPPER LOWER	00 0000 000 00 0000 000	00 0000 000 00 0000 000	00 0000 000 00 0000 000	00 0000 000 00 0000 000	00 0000 000 00 0000 000	00 0000 000 00 0000 000	00 0000 000 00 0000 000	00 0000 000 00 0000 000	00 0000 000 00 0000 000	00 0000 000 00 0000 000
ORGAN SOLO		OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
PERCUSSION	2nd 3rd	OFF OFF	OFF OFF	OFF OFF	OFF OFF	OFF OFF	OFF OFF	OFF OFF	OFF OFF	OFF OFF	OFF OFF
VIBRATO		OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
LESLIE S/F		OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
VIBRATO MODE		C1	C1	C1	C1	C1	C1	C1	C1	C1	C1
VIBRATO SPEED		NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
VIBRATO	UPPER LOWER	ON OFF	ON OFF	ON OFF	ON OFF	ON OFF	ON OFF	ON OFF	ON OFF	ON OFF	ON OFF
PERCUSSION DECAY		S	S	S	S	S	S	S	S	S	S
PERCUSSION SOFT		OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
PERCUSSION TOUCH		ON	ON	ON	ON	ON	ON	ON	ON	ON	ON
PERCUSSION VELOCITY		OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
PERCUSSION LEVEL		16	16	16	16	16	16	16	16	16	16
PERC. DRAWBAR CANCEL		ON	ON	ON	ON	ON	ON	ON	ON	ON	ON
PERC. KEY TRACK		OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
DRAW. VOICING	UPPER LOWER	B-TYPE B-TYPE	B-TYPE B-TYPE	B-TYPE B-TYPE	B-TYPE B-TYPE	B-TYPE B-TYPE	B-TYPE B-TYPE	B-TYPE B-TYPE	B-TYPE B-TYPE	B-TYPE B-TYPE	B-TYPE B-TYPE
DRAW. ATTACK	UPPER LOWER	NORM CLICK NORM CLICK	NORM CLICK NORM CLICK	NORM CLICK NORM CLICK	NORM CLICK NORM CLICK	NORM CLICK NORM CLICK	NORM CLICK NORM CLICK	NORM CLICK NORM CLICK	NORM CLICK NORM CLICK	NORM CLICK NORM CLICK	NORM CLICK NORM CLICK
DRAW. SUSTAIN	UPPER LOWER	OFF OFF	OFF OFF	OFF OFF	OFF OFF	OFF OFF	OFF OFF	OFF OFF	OFF OFF	OFF OFF	OFF OFF
DRAW. SUS. LENGTH	UPPER LOWER	SHORT SHORT	SHORT SHORT	SHORT SHORT	SHORT SHORT	SHORT SHORT	SHORT SHORT	SHORT SHORT	SHORT SHORT	SHORT SHORT	SHORT SHORT
DRAW. FOLD BACK	LOW HIGH	2C 4G	2C 4G	2C 4G	2C 4G	2C 4G	2C 4G	2C 4G	2C 4G	2C 4G	2C 4G
SPLIT ON/OFF		OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
SPLIT POINT KEY		2B	2B	2B	2B	2B	2B	2B	2B	2B	2B
LOWER OCTAVE		NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
LOWER CANCEL		OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
OVER DRIVE		OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
LESLIE		ON	ON	ON	ON	ON	ON	ON	ON	ON	ON
LESLIE	SLOW SPEED FAST SPEED RISE TIME FALL TIME	30rpm 388rpm 5.0 s 3.5 s	30rpm 388rpm 5.0 s 3.5 s	30rpm 388rpm 5.0 s 3.5 s	30rpm 388rpm 5.0 s 3.5 s	30rpm 388rpm 5.0 s 3.5 s	30rpm 388rpm 5.0 s 3.5 s	30rpm 388rpm 5.0 s 3.5 s	30rpm 388rpm 5.0 s 3.5 s	30rpm 388rpm 5.0 s 3.5 s	30rpm 388rpm 5.0 s 3.5 s

GLOBAL INITIAL DATA TABLE

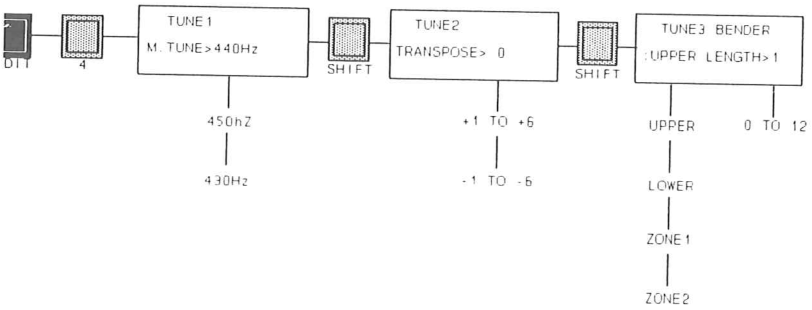
Menu Selection	Function		Data Options	Default Setting
TUNE1	MASTER TUNE		430 ~ 450Hz	440Hz
TUNE2	TRANSPOSE		-6 ~ +6	0
TUNE3	BENDER LENGTH	UPPER	0 ~ 12	1
		LOWER	0 ~ 12	1
		ZONE1	0 ~ 12	1
		ZONE2	0 ~ 12	1
FOOT SW1	FOOT SW SELECT		LESLIE S/F UM SUS LM SUS PRESET FW MIDI STSP UM DAMPER LM DAMPER OFF	LESLIE S/F
FOOT SW2	FOOT SW CONTACT		PRS+, PRS-	PRS+
	FOOT SW MODE INT.		ALT, MOM	ALT
	FOOT SW MODE EXT.		ALT, MOM	MOM
MIDI1 SYSTEM	MIDI OMNI		ON, OFF	OFF
	MIDI LOCAL		ON, OFF	ON
MIDI2 SYSTEM	MIDI NRPN		ON, OFF	OFF
MIDI3 SYSTEM	EXPRESSION		INTERNAL, EXTERNAL	INTERNAL
MIDI4 SYSTEM	MIDI IN SPLIT GATE		ON, OFF	OFF
MIDI11 CONTROL	MIDI CONTROL CODE	FOOT SW	OFF, 0 ~ 127	64
		MODULATION	OFF, 0 ~ 127	1
		EXPRESSION	OFF, 0 ~ 127	7
		LESLIE S/F	OFF, 0 ~ 127	92
MIDI12 FILTER	MIDI FILTER	PROGRAM NO.	ON, OFF	OFF
		VOL.OUT	ON, OFF	OFF
		DRAWBAR	ON, OFF	OFF
EFFECT4	REVERB MODE		ROOM LIVE HALL CHURCH	HALL
	PRESET BANK SELECT		A, B, C, D	A
	PRESET BANK LOCK		ON, OFF	OFF
	PRESET RECORD MODE		ALL, PRESET, PATCH	ALL
	MEMORY DUMP CHANNEL		1 ~ 32ch	1ch
	MEMORY DUMP PROTECT		ON, OFF	OFF

Hammond XB-2

Special Advanced Features

SPECIAL ADVANCED FEATURES

➤ Advanced Features - Tune


DIT
4
TUNE 1
M. TUNE>440Hz
450hZ
430Hz
SHIFT
TUNE2
TRANSPOSE> 0
+1 TO +6
-1 TO -6
SHIFT
TUNE3 BENDER
:UPPER LENGTH>1
UPPER
LOWER
ZONE 1
ZONE 2
0 TO 12

These Advanced Feature Menus allow you to make the following changes to the XB-2's Drawbars:

1. Master Tune -
   This Advanced Feature allows you to raise or lower the absolute tuning of the entire instrument.

2. Transpose -
   This Advanced Feature allows you to transpose the XB-2 either six half-steps up or six half-steps down.

3. Bender Length -
   This Advanced Feature allows you to adjust the amount or range of the Pitch Bend Wheel from "0" (zero) to a full octave (12 half-steps up or down).

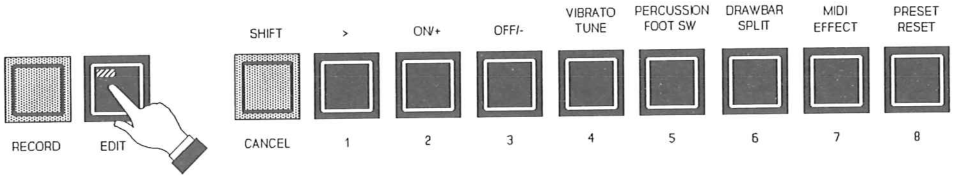
The following pages give a more detailed explanation of how these Advanced Feature Menus work.

TUNE1 - Master Tune = EDIT 4

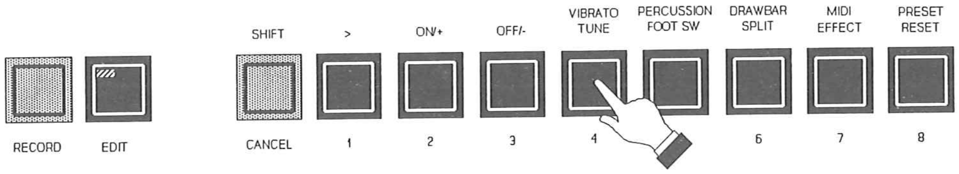
This Advanced Feature allows you to raise or lower the absolute tuning of the entire instrument.

To access the TUNE1 Menu Page, do the following:

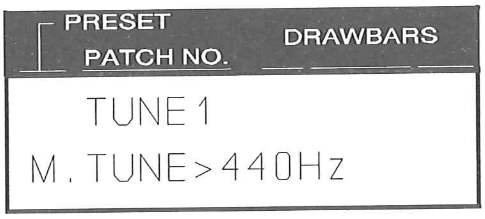
1. Touch the EDIT Touch Button "ON" (red LED lit).


SHIFT
>
ON/+
OFF/-
VIBRATO TUNE
PERCUSSION FOOT SW
DRAWBAR SPLIT
MIDI EFFECT
PRESET RESET
RECORD
EDIT
CANCEL
1
2
3
4
5
6
7
8

2. Touch the black number 4 [VIBRATO/TUNE] Touch Button <u>once</u>.


SHIFT
>
ON/+
OFF/-
VIBRATO TUNE
PERCUSSION FOOT SW
DRAWBAR SPLIT
MIDI EFFECT
PRESET RESET
RECORD
EDIT
CANCEL
1
2
3
4
6
7
8

The Information Center Display should show the following:


PRESET
PATCH NO.
DRAWBARS

```
  TUNE1
M.TUNE>440Hz
```

3. Touch the black number 2 [ON/+] Touch Button to raise the pitch of the XB-2. Touch the black number 3 [OFF/-] Touch Button to lower the pitch. These changes are reflected in the Information Center Display. The number will increase as the pitch is raised and the number will decrease as the pitch is lowered. The upper tuning limit is 450Hz. The lower tuning limit is 430Hz.

This is a Global Command, and this data CAN NOT be stored to a Preset. To see a total listing of all Global Commands, see the Global Initial Data Table on page 115.

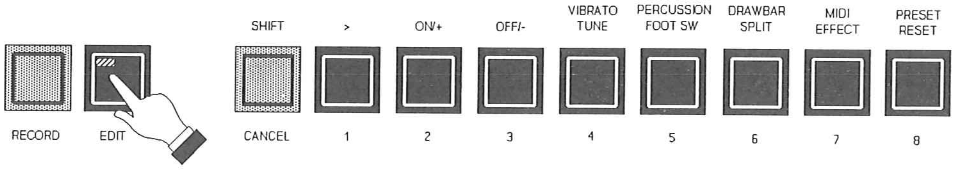
To EXIT this menu, simply touch the EDIT Touch Button.

TUNE2 - Transpose = EDIT + 4 + SHIFT

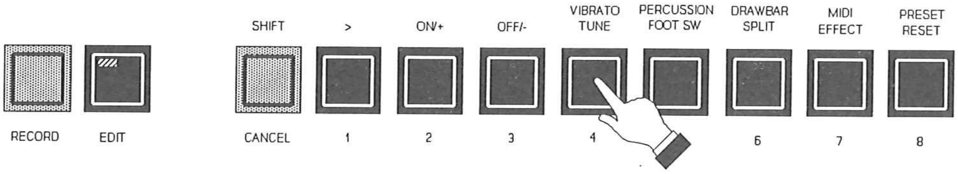
This Advanced Feature allows you to transpose the XB-2 six half-steps up or six half-steps down.

To access the TUNE2 Menu Page, do the following:

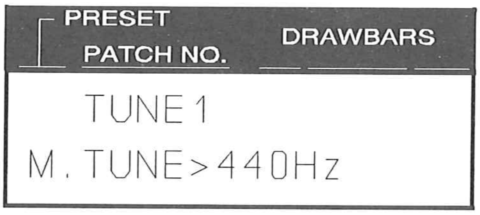
1. Touch the EDIT Touch Button "ON" (red LED lit).


SHIFT
>
ON/+
OFF/-
VIBRATO TUNE
PERCUSSION FOOT SW
DRAWBAR SPLIT
MIDI EFFECT
PRESET RESET
RECORD
EDIT
CANCEL
1
2
3
4
5
6
7
8

2. Touch the black number 4 [VIBRATO/TUNE] Touch Button once.

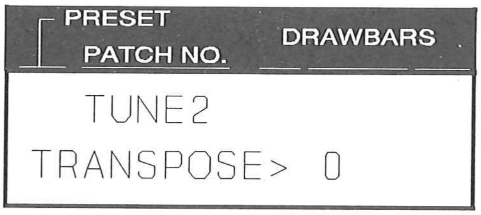

SHIFT
>
ON/+
OFF/-
VIBRATO TUNE
PERCUSSION FOOT SW
DRAWBAR SPLIT
MIDI EFFECT
PRESET RESET
RECORD
EDIT
CANCEL
1
2
3
4
6
7
8

The Information Center Display should show the following:


PRESET
PATCH NO.
DRAWBARS

```
  TUNE1
M.TUNE>440Hz
```

3. Touch the gray SHIFT Touch Button once. The Information Center Display should show the following:


PRESET
PATCH NO.
DRAWBARS

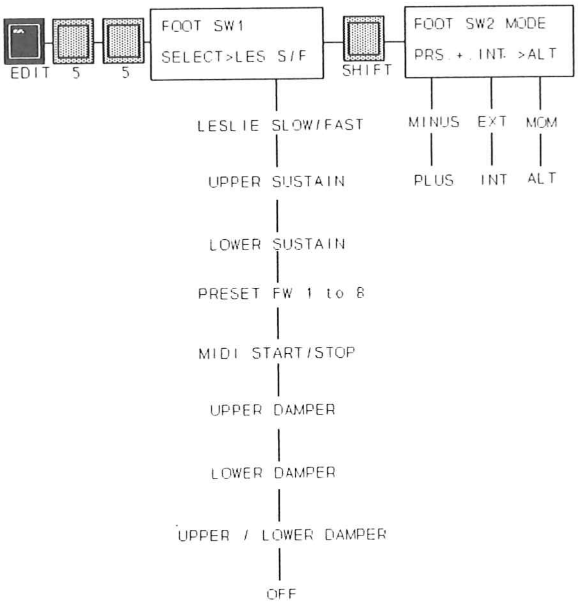
```
  TUNE2
TRANSPOSE> 0
```

4. Each time the black number 2 [ON/+] Touch Button is touched, it will raise the pitch of the XB-2 one half-step. Each time the black number 3 [OFF/] Touch Button is touched, it will lower the pitch of the XB-2 one half-step. These changes are reflected in the Information Center Display. The number will increase (+1 to +6) for each half step raised and the number will decrease (-1 to -6) for each half step lowered.

This is a Global Command, and this data CAN NOT be stored to a Preset. To see a total listing of all Global Commands, see the Global Initial Data Table on page 115.

To EXIT this menu, simply touch the EDIT Touch Button.

➤ Advanced Features - Foot Switch


EDIT
5
5
FOOT SW1
SELECT>LES S/F
SHIFT
FOOT SW2 MODE
PRS + , INT >ALT
LESLIE SLOW/FAST
UPPER SUSTAIN
LOWER SUSTAIN
PRESET FW 1 to 8
MIDI START/STOP
UPPER DAMPER
LOWER DAMPER
UPPER / LOWER DAMPER
OFF
MINUS
PLUS
EXT
INT
MOM
ALT

These Advanced Feature Menus allow you to make the following changes to the XB-2:

1. Foot Switch Function -
   Allows you to select which internal function the Foot Switch controls.

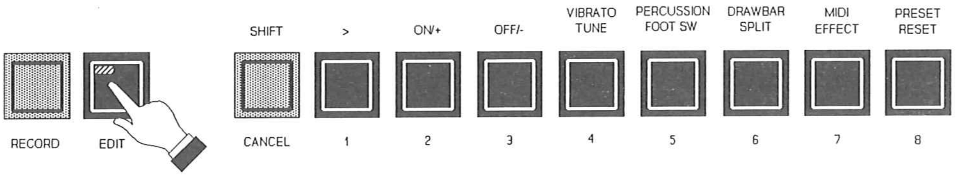
2. Foot Switch Polarity, Internal/External & Alternate / Momentary Select -
   Allows you to select the Polarity ("+" or "-") for the Foot Switch, select either "ALT" (Alternate [turn-on/turn-off]) or "MOM" (Momentary [turn-on-and-hold]) function for the Foot Switch, and select either "INT" (Internal) or "EXT" (External) for these functions.

The following pages give a more detailed explanation of how these Advanced Feature Menus work.

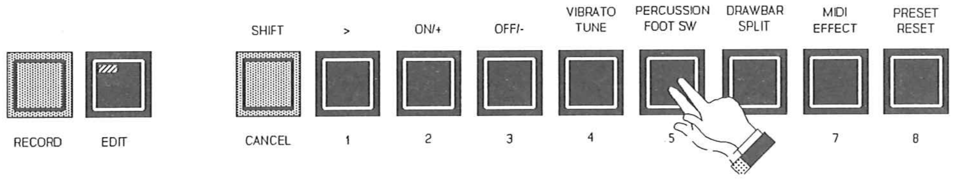
FOOT SW1 - Function Select = EDIT + 5 + 5

To access the FOOT SW1 Menu Page, do the following:

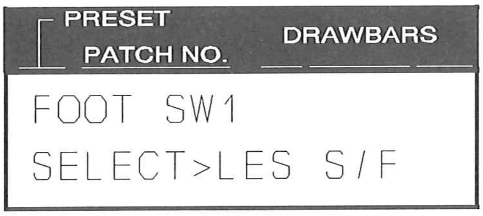
1. Touch the EDIT Touch Button "ON" (red LED lit).


SHIFT
>
ON/+
OFF/-
VIBRATO TUNE
PERCUSSION FOOT SW
DRAWBAR SPLIT
MIDI EFFECT
PRESET RESET
RECORD
EDIT
CANCEL
1
2
3
4
5
6
7
8

2. Touch the black number 5 [PERCUSSION/FOOT SW] Touch Button twice.


SHIFT
>
ON/+
OFF/-
VIBRATO TUNE
PERCUSSION FOOT SW
DRAWBAR SPLIT
MIDI EFFECT
PRESET RESET
RECORD
EDIT
CANCEL
1
2
3
4
5
7
8

The Information Center Display should show the following:


PRESET
PATCH NO.
DRAWBARS

FOOT SW1
SELECT>LES S/F

3. Now select the Foot Switch function by doing the following:

   Use the black number 2 [ON/+] and the number 3 [OFF/-] Touch Buttons to select the Foot Switch function.

The data chart below shows the options you may select.

FOOT SW1 FUNCTIONS	
***LESLIE S/F**	Controls Leslie Speed "SLOW" or "FAST".
UPPER SUS	Turns Sustain "ON" for the Upper Manual (right of split).
LOWER SUS	Turns Sustain "ON" for the Lower Manual (left of split).
PRESET FW	Allows you to change Presets using the Foot Switch. Each time the Foot Switch is pressed the next Preset in sequence will be selected.
MIDI STSP	Sends the MIDI Start and Stop command.
UM DAMPER	Allows notes played on the Upper Manual to be "damped" or sustained.
LM DAMPER	Allows notes played on the Lower Manual to be "damped" or sustained.
UL DAMPER	Allows notes played on both Upper and Lower Manual to be "damped" or sustained.
OFF	Disables the foot switch, allowing it to be used strictly for sending MIDI Codes.

*default setting

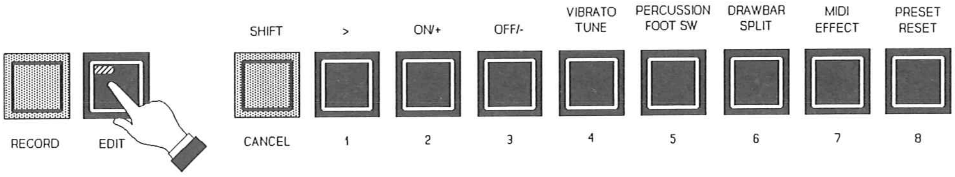
This is a Global Command, and this data CAN NOT be stored to a Preset. To see a total listing of all Global Commands, see the Global Initial Data Table on page 114.

To EXIT this menu, simply touch the EDIT Touch Button.

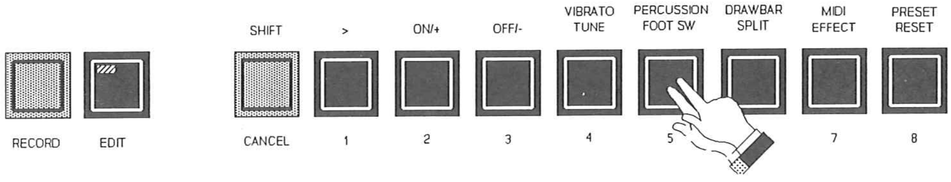
FOOT SW2 - Polarity & Mode Select = EDIT + 5 + 5 + SHIFT

To access the FOOT SW2 Menu Page, do the following:

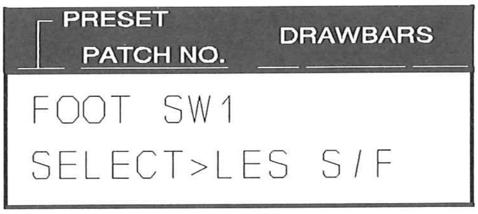
1. Touch the EDIT Touch Button "ON" (red LED lit).


SHIFT
>
ON/+
OFF/-
VIBRATO TUNE
PERCUSSION FOOT SW
DRAWBAR SPLIT
MIDI EFFECT
PRESET RESET
RECORD
EDIT
CANCEL
1
2
3
4
5
6
7
8

2. Touch the black number 5 [PERCUSSION/FOOT SW] Touch Button twice.

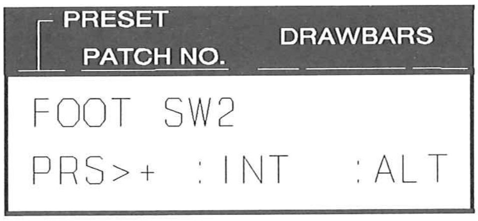

SHIFT
>
ON/+
OFF/-
VIBRATO TUNE
PERCUSSION FOOT SW
DRAWBAR SPLIT
MIDI EFFECT
PRESET RESET
RECORD
EDIT
CANCEL
1
2
3
4
5
7
8

The Information Center Display should show the following:


PRESET
PATCH NO.
DRAWBARS

```
FOOT SW1
SELECT>LES S/F
```

3. Touch the gray SHIFT Touch Button once. The Information Center Display should show the following:


PRESET
PATCH NO.
DRAWBARS

```
FOOT SW2
PRS>+ :INT  :ALT
```

4. Now select the option you wish by doing the following:

   Use the black number 1 [>] Select Touch Button to move the Prompter Mark [>] between "ALT" / "MOM" selections, "INT" / "EXT" selections and "PRS+" / "PRS-" selections.

   Use the black number 2 [ON/+] and the number 3 [OFF/-] Touch Buttons to select either "ALT" or "MOM" or to select either "PRS+" or "PRS-".

The data chart below explains how this Advanced Feature functions.

FOOT SW2 FUNCTIONS	
+"PRS+" / "PRS-"	"PRS+" refers to a foot switch that "closes", or makes contact, when depressed, such as the Hammond foot switch. Some foot switches from other manufacturers "open", or break contact, when depressed. Use this Advanced Feature to select the correct mode of operation for your particular Foot Switch.
"INT" / "EXT"	"INT" refers to the internal function of the XB-2 controlled by the Foot Switch such as Leslie Fast/Slow, etc. "EXT" refers to MIDI Controller numbers which also can be sent from the Foot Switch. For more information, see the explanation of MIDI Controller Numbers starting on page 157.
***"ALT" / "MOM"**	"ALT" (Alternate [turn-on/turn-off]) "MOM" (Momentary [turn-on-and-hold])

*default setting is "ALT".
+default setting is "PRS+".

This is a Global Command, and this data CAN NOT be stored to a Preset. To see a total listing of all Global Commands, see the Global Initial Data Table on page 115.

To EXIT this menu, simply touch the EDIT Touch Button.

Hammond XB-2

MIDI

MIDI

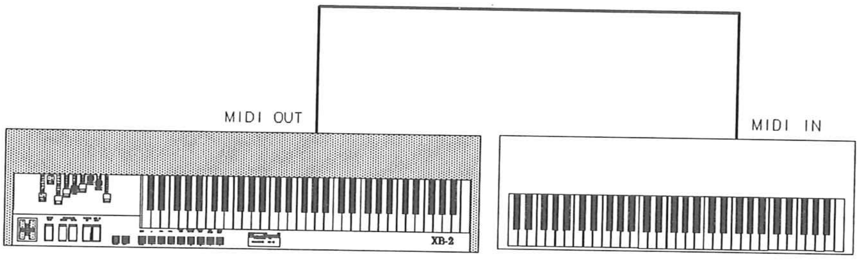
➤ A Word About What MIDI Can Do

The letters MIDI stand for Musical Instrument Digital Interface, an international standard for connecting synthesizers, sound modules, drum machines, and other electronic musical instruments so they can exchange performance data.

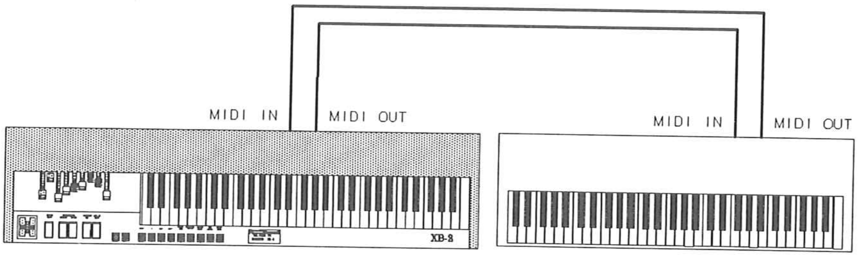
➤ Typical MIDI Applications

MIDI IN/MIDI OUT

In order to allow communication to take place, all MIDI-equipped instruments have at least two MIDI jacks - MIDI IN and MIDI OUT. MIDI IN is for receiving MIDI data from another instrument, while MIDI OUT is for sending MIDI data out to another instrument.



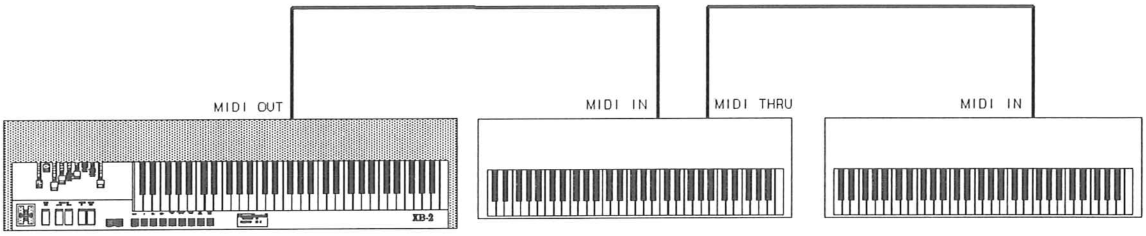
In the example above, the keyboard(s) of the sending or transmitting instrument (MIDI OUT) are being used to control the sound generators of the receiving instrument (MIDI IN). When a key is played on the sending instrument, the corresponding note will play on the receiving instrument as though the appropriate key had been pressed on the receiving instruments's keyboard. When the key is released on the sending instrument, the tone being played by the receiving instrument will stop. (This is called "Note On / Note Off" data.) This is the most basic MIDI hookup, and is sometimes called a "closed loop".



The above is an example of an "open loop", which allows two-way communication between two MIDI-equipped devices. In this example, the keyboard(s) of either instrument can be used to control the sound generators of the other.

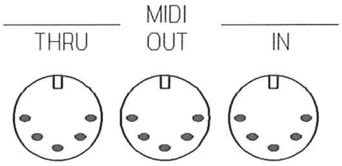
MIDI THRU

Many MIDI instruments also have an additional MIDI connection called MIDI THRU. MIDI THRU allows more than one instrument to be controlled by the same transmitting instrument - in other words, the data being sent from MIDI OUT goes to the MIDI IN, where it can be passed on to another instrument via MIDI THRU. The picture shown below shows how this is done.



In the above example, the MIDI data goes from the sending instrument (MIDI OUT) to another instrument (MIDI IN), which receives the data and passes it along to a third instrument via the MIDI THRU connection.

Your Hammond XB-2 has MIDI IN, MIDI OUT and MIDI THRU jacks. These are located on the back right hand side of the instrument.

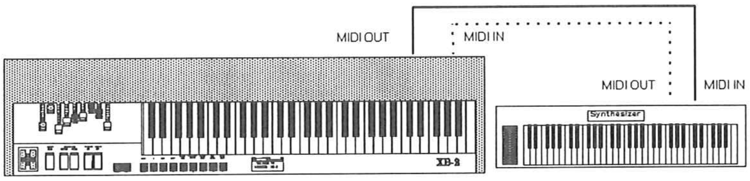


The MIDI interface on your Hammond XB-2 allows you to:

(1) Receive and transmit keyboard data.
(2) Receive and transmit expression pedal data.
(3) Receive and transmit foot pedal data.
(4) Receive and transmit program numbers - codes for presets to change voices.
(5) Set MIDI channel numbers for sending and receiving to any number from 1 to 16.
(6) Turn LOCAL CONTROL and NRPN "ON" and "OFF".

Ensemble playing with another keyboard instrument

Example: A synthesizer

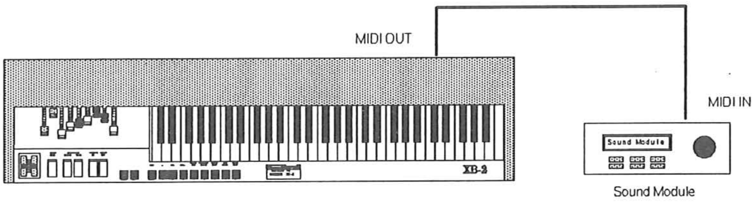


If you connect the MIDI OUT jack of the XB-2 to the MIDI IN jack on the synthesizer and the synthesizer's LINE OUTPUT jack to an external amplifier jack, you will be able to play both instruments from the organ's keyboard. The interface transmits both the keys played and the velocity with which you played them. Therefore, synthesizer output is exactly the same as it would be if you were playing the keyboard directly. The synthesizer voice blends with the organ's to create an ensemble effect. You can, for example, add the synthesizer's strings to your solo to give a musical piece more depth.

NOTE: If you reverse the MIDI IN and MIDI OUT connections, you can play the XB-2 from the synthesizer just as easily.

Sound Modules

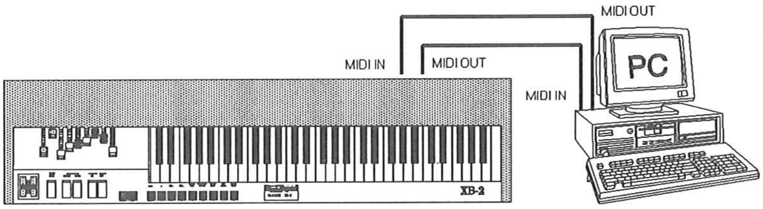
Example: An external sound module



The above illustration shows how an external synthesizer module may be connected to the organ.

Personal Computer

Example: A personal computer



First, you will need a MIDI interface and MIDI software for your computer. Contact your Hammond Dealer for help. Run a standard MIDI cable from the MIDI OUT (or MIDI THRU connector) of the XB-2 to the MIDI IN connector of the computer MIDI interface. Then run a standard MIDI cable from the MIDI OUT connector of the computer interface to the MIDI IN connector of the XB-2.

▶ Transmitting MIDI information

The following paragraphs will explain specific commands which are transmitted in MIDI format to a MIDI slave instrument, and what they can do in detail.

NOTE ON / NOTE OFF

This command tells which key has been played. For example, suppose you play middle "C" on the keyboard of the organ connected to a synthesizer. The organ transmits which key has been played to the synthesizer. Upon receiving this information, the synthesizer will produce middle "C".

VELOCITY

This command tells at what velocity a key has been played. For example, suppose you play middle "C" on the keyboard of the organ connected to a synthesizer. The organ transmits velocity information to the synthesizer. Upon receiving this information, the synthesizer will produce middle "C"at the appropriate volume.

CONTROL CHANGE

This command allows a MIDI sequencer or data recorder to play sequences with registration changes. For example, suppose you record a song from the organ on a connected MIDI sequencer, and make registration changes during your song. When you play back the sequence, the organ will respond with the registration changes you made while recording the song.

PROGRAM CHANGE

This command specifies the numbers assigned to different tones of the MIDI slave instrument. For example, if you touch the Combination Preset #1 on the organ, it will select Program Number 1 of the synthesizer.

These commands cannot be transmitted and received successfully unless the MIDI channels of both MIDI master instrument and MIDI slave instrument are exactly the same. The data table on page 144 shows the default channel assignments for the XB-2.

SPECIAL NOTE: The RECORD Touch Button can be used as the MIDI MUTE function to send a command turning off all MIDI notes. Suppose a MIDI instrument is connected to the XB-2 and both are being played simultaneously (ensemble) and for some reason a note or group of notes will hold on, even if you have released the keys. Touch the RECORD Touch Button and the XB-2 will send an "all notes off" command clearing the holding note or notes.

➤ MIDI Manuals and Zones on the XB-2

Your Hammond XB-2 can transmit on up to four MIDI Channels simultaneously. This is done so that you can make use of a "multi-timbral" sound module or synthesizer; i.e., a sound producer capable of playing more than one voice at the same time. For example, suppose you want to play various combinations of voices such as Piano and Strings, Piano and Vocal Ensemble, etc. The XB-2 gives you the ability to do so.

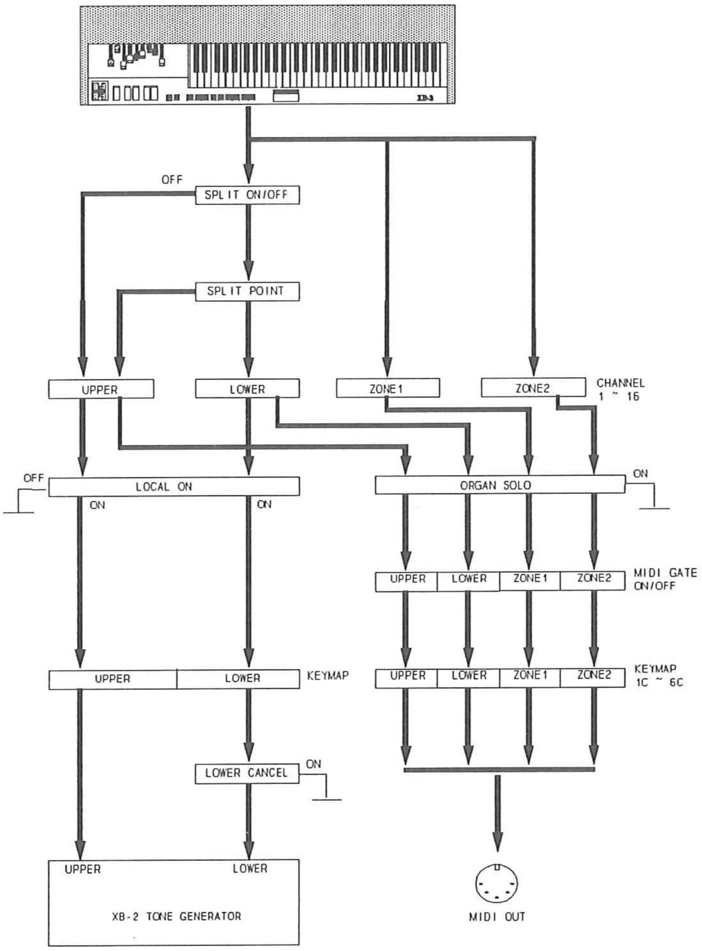
As explained in the Keyboard Split section, the XB-2's keyboard can be Split into Upper and Lower Manuals in order to simulate a conventional two-manual organ such as a B-3. In addition to the ability to set different Drawbar combinations for Upper and Lower Manuals, you can also set the Upper and Lower Manuals to play on different MIDI Channels so that it is possible to play, as one example, Piano on the Upper Manual and Wood Bass on the Lower Manual.

In addition to the Upper and Lower Manuals, there are two additional "manuals" on the XB-2 called Zones. These can be assigned MIDI Channel numbers, Program Numbers, "low" and "high" limits and other MIDI data. These Zones allow you to control additional sounds from the XB-2 keyboard, thereby giving your XB-2 the ability to function as a MIDI Master Controller for a sequencer, sound modules, or whatever you wish. For example, you could have Piano on one part of the keyboard, Strings playing from another part of the keyboard, Wood Bass from another part of the keyboard, and Trumpet from still another part of the keyboard.

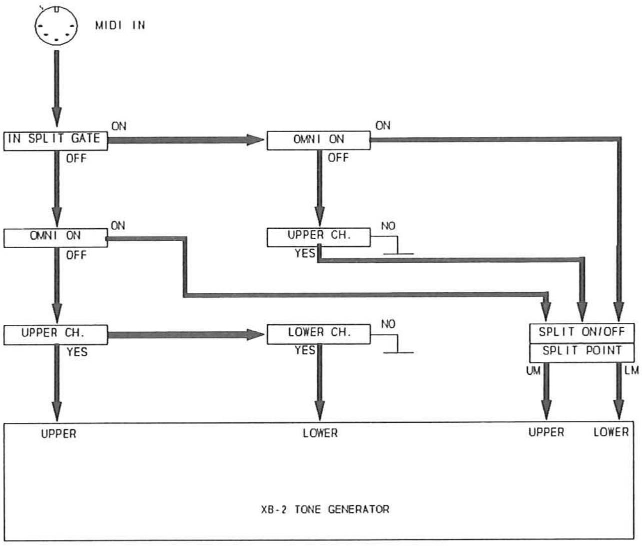
The data chart on the next page shows how MIDI Key Data is implemented on the XB-2.

MIDI KEY DATA CHART

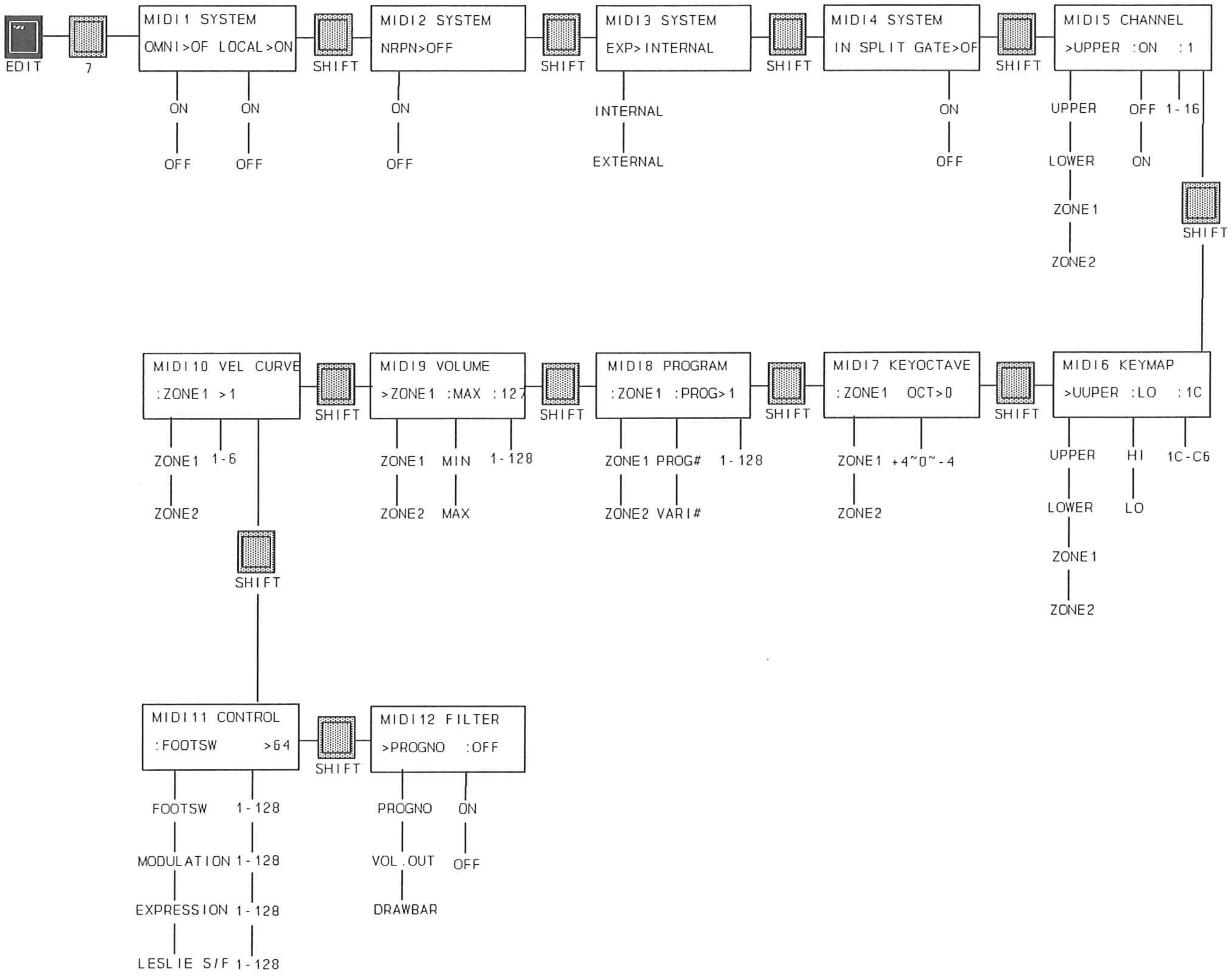
XB-2 MIDI OUT


XB-2
OFF
SPLIT ON/OFF
SPLIT POINT
UPPER
LOWER
ZONE1
ZONE2
CHANNEL
1 ~ 16
OFF
LOCAL ON
ON
ON
ORGAN SOLO
ON
UPPER
LOWER
ZONE1
ZONE2
MIDI GATE
ON/OFF
UPPER
LOWER
KEYMAP
UPPER
LOWER
ZONE1
ZONE2
KEYMAP
1C ~ 6C
LOWER CANCEL
ON
UPPER
LOWER
XB-2 TONE GENERATOR
MIDI OUT

XB-2 MIDI IN


MIDI IN
IN SPLIT GATE
ON
OFF
OMNI ON
ON
OFF
OMNI ON
ON
OFF
UPPER CH.
NO
YES
UPPER CH.
YES
LOWER CH.
NO
YES
SPLIT ON/OFF
SPLIT POINT
UM
LM
UPPER
LOWER
UPPER
LOWER
XB-2 TONE GENERATOR

Advanced Features - MIDI


EDIT
7
MIDI1 SYSTEM
OMNI>OF LOCAL>ON
ON
OFF
ON
OFF
SHIFT
MIDI2 SYSTEM
NRPN>OFF
ON
OFF
SHIFT
MIDI3 SYSTEM
EXP>INTERNAL
INTERNAL
EXTERNAL
SHIFT
MIDI4 SYSTEM
IN SPLIT GATE>OF
ON
OFF
SHIFT
MIDI5 CHANNEL
>UPPER :ON :1
UPPER
LOWER
ZONE1
ZONE2
OFF
ON
1-16
SHIFT
MIDI6 KEYMAP
>UUPER :LO :1C
UPPER
LOWER
ZONE1
ZONE2
HI
LO
1C-C6
SHIFT
MIDI7 KEYOCTAVE
:ZONE1 OCT>0
ZONE1
ZONE2
+4~0~-4
SHIFT
MIDI8 PROGRAM
:ZONE1 :PROG>1
ZONE1
ZONE2
PROG#
VARI#
1-128
SHIFT
MIDI9 VOLUME
>ZONE1 :MAX :127
ZONE1
ZONE2
MIN
MAX
1-128
SHIFT
MIDI10 VEL CURVE
:ZONE1 >1
ZONE1
ZONE2
1-6
SHIFT
MIDI11 CONTROL
:FOOTSW >64
FOOTSW
MODULATION
EXPRESSION
LESLIE S/F
1-128
1-128
1-128
1-128
SHIFT
MIDI12 FILTER
>PROGNO :OFF
PROGNO
VOL.OUT
DRAWBAR
ON
OFF

These Advanced Feature Menus allow you to make the following changes to the XB-2's Presets:

1. OMNI ON / OFF and LOCAL ON / OFF -
   Allows you to select OMNI Mode "ON" or "OFF" and Local Control "ON" or "OFF".

2. NRPN ON / OFF -
   Allows you to turn "ON" or "OFF" NRPN (Non Registered Program Number).

3. EXP INTERNAL / EXTERNAL -
   Allows you to choose whether you want to control the volume of a connected MIDI device from the Expression Pedal.

4. IN SPLIT GATE -
   Allows you to select how the XB-2 responds to incoming MIDI Key data.

5. MIDI CHANNEL -
   Allows you to select MIDI Channels.

6. MIDI KEYMAP -
   Allows you to set the Low and High note ranges for the Keymap zones.

7. MIDI KEYOCTAVE -
   Allows you to change the octave ranges of the different areas of the Keyboard ±4 octaves.

8. MIDI PROGRAM -
   Allows you to select Program Numbers.

9. MIDI VOLUME -
   Allows you to set the maximum and minimum Volume ranges.

10. MIDI VELOCITY CURVE -
    Allows you to select the velocity curve you wish.

11. MIDI CONTROL -
    Allows you to set the Controller number for the Foot Switch, Modulation Wheel, Expression Pedal, and the LESLIE Touch Tab.

12. MIDI FILTER -
    Allows you to turn "ON" or "OFF" Program Number Filter, Volume Out Filter and Drawbar Filter.

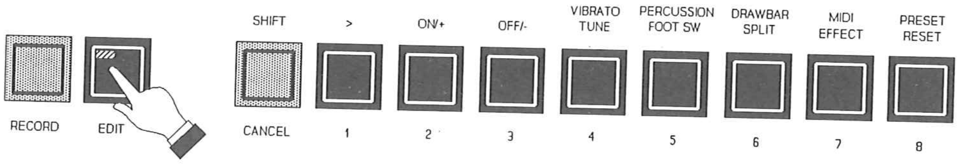
The following pages give a more detailed explanation of how these Advanced Feature Menus work.

MIDI1 SYSTEM - OMNI and LOCAL = EDIT + 7

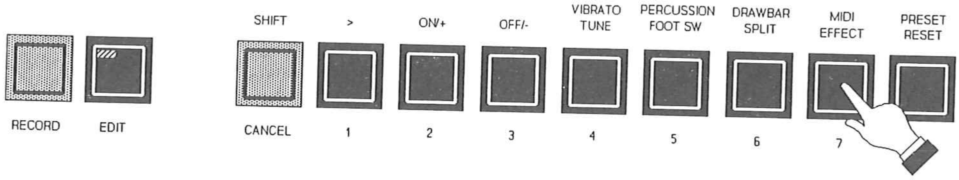
This Menu Page has two functions: (1) Selection of OMNI Mode "ON" or "OFF" and (2) Selection of Local Control "ON" or "OFF".

To access the MIDI1 SYSTEM Menu Page, do the following:

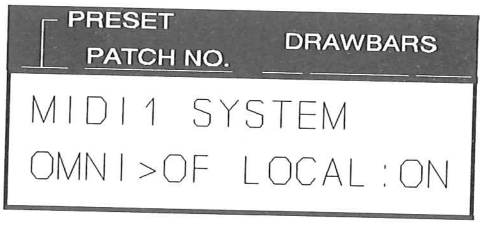
1. Touch the EDIT Touch Button "ON" (red LED lit).


SHIFT
>
ON/+
OFF/-
VIBRATO TUNE
PERCUSSION FOOT SW
DRAWBAR SPLIT
MIDI EFFECT
PRESET RESET
RECORD
EDIT
CANCEL
1
2
3
4
5
6
7
8

2. Touch the black number 7 [MIDI/EFFECT] Touch Button once.


SHIFT
>
ON/+
OFF/-
VIBRATO TUNE
PERCUSSION FOOT SW
DRAWBAR SPLIT
MIDI EFFECT
PRESET RESET
RECORD
EDIT
CANCEL
1
2
3
4
5
6
7

The Information Center Display should show the following:


PRESET
PATCH NO.
DRAWBARS

MIDI1 SYSTEM
OMNI>OF LOCAL:ON

3. Now select the MIDI Channel by doing the following:

   Use the black number 1 [>] Select Touch Button to move the Prompter Mark [>] between "OMNI" (Omni Mode) and "LOCAL" (Local Control).

   Use the black number 2 [ON/+] and the number 3 [OFF/-] Touch Buttons to turn Omni Mode or Local Control "ON" or "OFF".

The data chart below explains how this Advanced Feature functions.

OMNI/LOCAL OPTIONS	
***OMNI ON / OFF**	When OMNI is "ON", the XB-2 will receive MIDI note and controller information from another MIDI instrument on all 16 Channels. When OMNI is "OFF", the XB-2 will receive MIDI note and controller information only on the channels it is set for, and ignore MIDI information coming from any other channels.
+LOCAL ON / OFF	When LOCAL is "ON", the XB-2 will play both its internal sounds and the sounds from a connected MIDI device. When LOCAL is "OFF", the XB-2 will play only the sounds from a connected MIDI device and the XB-2's internal sounds are silenced.

*default setting is "OFF".
+default setting is "ON".

This is a Global Command, and this data CAN NOT be stored to a Preset. To see a total listing of all Global Commands, see the Global Initial Data Table on page 114.

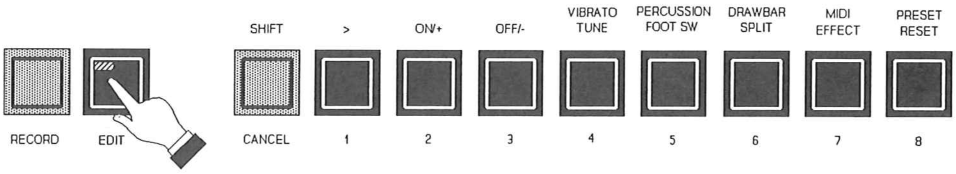
To EXIT this menu, simply touch the EDIT Touch Button.

MIDI2 SYSTEM - NRPN = EDIT + 7 + SHIFT

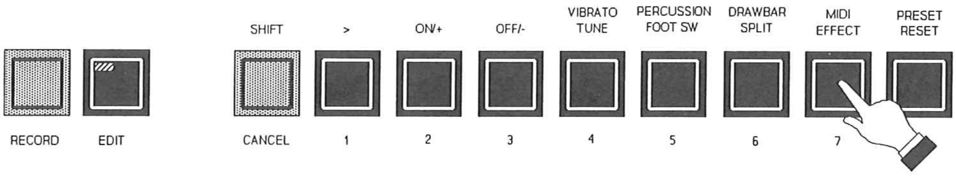
This Menu Page will allow you to turn "ON" or "OFF" NRPN (Non Registered Program Number). The NRPN chooses whether to transmit or receive the command which determines a control exchange between specific brands of MIDI products.

To access the MIDI2 SYSTEM Menu Page, do the following:

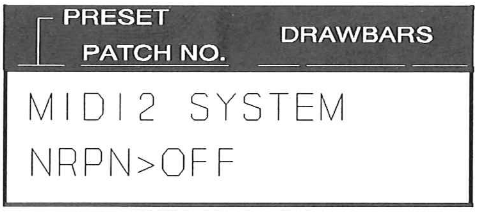
1. Touch the EDIT Touch Button "ON" (red LED lit).


SHIFT
>
ON/+
OFF/-
VIBRATO TUNE
PERCUSSION FOOT SW
DRAWBAR SPLIT
MIDI EFFECT
PRESET RESET
RECORD
EDIT
CANCEL
1
2
3
4
5
6
7
8

2. Touch the black number 7 [MIDI/EFFECT] Touch Button once.


SHIFT
>
ON/+
OFF/-
VIBRATO TUNE
PERCUSSION FOOT SW
DRAWBAR SPLIT
MIDI EFFECT
PRESET RESET
RECORD
EDIT
CANCEL
1
2
3
4
5
6
7

3. Touch the gray SHIFT Touch Button once. The Information Center Display should show the following:


PRESET
PATCH NO.
DRAWBARS

```
MIDI2 SYSTEM
NRPN>OFF
```

The default setting for NPRN is "OFF".

Touch the black number 2 [ON/+] or the black number 3 [OFF/-] Select Touch Button to turn NRPN "ON" and "OFF".

When NRPN is "ON", the XB-2 will send and recognize System Exclusive codes, such as Drawbar Filter.

This is a Global Command, and this data CAN NOT be stored to a Preset. To see a total listing of all Global Commands, see the Global Initial Data Table on page 115.

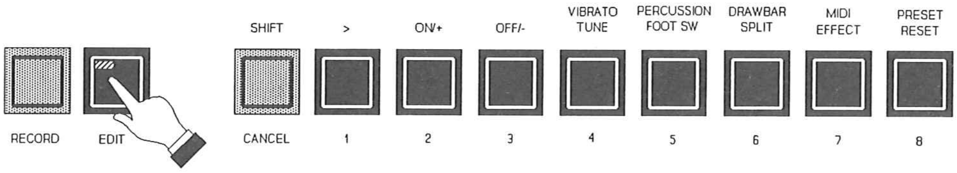
To EXIT this menu, simply touch the EDIT Touch Button.

MIDI3 SYSTEM - EXP = EDIT + 7 + SHIFT + SHIFT

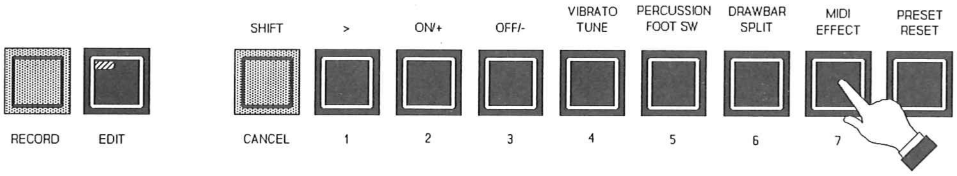
This Menu Page will allow you to choose whether you want to control the volume of a connected MIDI device from the Expression Pedal.

To access the MIDI3 SYSTEM Menu Page, do the following:

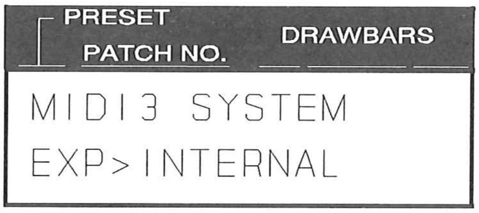
1. Touch the EDIT Touch Button "ON" (red LED lit).


SHIFT
>
ON/+
OFF/-
VIBRATO TUNE
PERCUSSION FOOT SW
DRAWBAR SPLIT
MIDI EFFECT
PRESET RESET
RECORD
EDIT
CANCEL
1
2
3
4
5
6
7
8

2. Touch the black number 7 [MIDI/EFFECT] Touch Button once.


SHIFT
>
ON/+
OFF/-
VIBRATO TUNE
PERCUSSION FOOT SW
DRAWBAR SPLIT
MIDI EFFECT
PRESET RESET
RECORD
EDIT
CANCEL
1
2
3
4
5
6
7

3. Touch the gray SHIFT Touch Button twice. The Information Center Display should show the following:


PRESET
PATCH NO.
DRAWBARS

MIDI3 SYSTEM
EXP>INTERNAL

4. Now select the MIDI Expression option by doing the following:

   Use the black number 2 [ON/+] or number 3 [OFF/-] Touch Button to toggle between "INTERNAL" or "EXTERNAL" modes.

The data chart below explains how this Advanced Feature functions.

MIDI EXPRESSION OPTIONS	
***INTERNAL**	When "INTERNAL" is selected, the XB-2 will control both the volume of its own sounds and the volume of a connected MIDI device.
EXTERNAL	When "EXTERNAL" is selected, the XB-2 will send Volume information out MIDI to control the volume of a connected MIDI instrument and will NOT control the volume of its own sounds. Use the XB-2's Master Volume Control to regulate the volume of the XB-2's internal voices.

*default setting

NOTE: This feature only works when the optional Expression Pedal is connected to the XB-2.

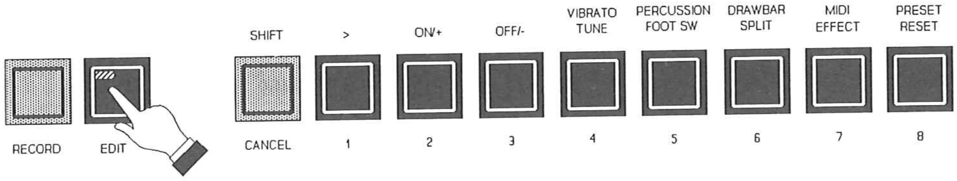
This is a Global Command, and this data CAN NOT be stored to a Preset. To see a total listing of all Global Commands, see the Global Initial Data Table on page 114.

To EXIT this menu, simply touch the EDIT Touch Button.

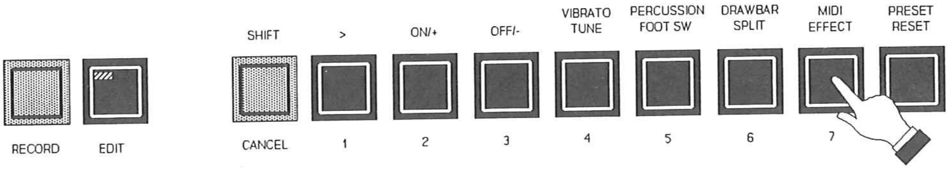
MIDI4 SYSTEM - IN SPLIT GATE = EDIT + 7 + SHIFT + SHIFT + SHIFT

To access the MIDI4 SYSTEM Menu Page, do the following:

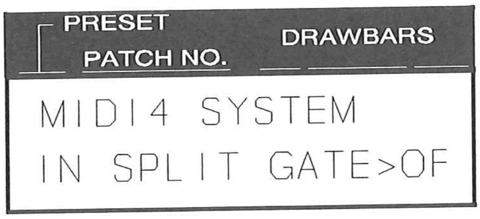
1. Touch the EDIT Touch Button "ON" (red LED lit).


SHIFT
>
ON/+
OFF/-
VIBRATO TUNE
PERCUSSION FOOT SW
DRAWBAR SPLIT
MIDI EFFECT
PRESET RESET
RECORD
EDIT
CANCEL
1
2
3
4
5
6
7
8

2. Touch the black number 7 [MIDI/EFFECT] Touch Button once.


SHIFT
>
ON/+
OFF/-
VIBRATO TUNE
PERCUSSION FOOT SW
DRAWBAR SPLIT
MIDI EFFECT
PRESET RESET
RECORD
EDIT
CANCEL
1
2
3
4
5
6
7

3. Touch the gray SHIFT Touch Button three times. The Information Center Display should show the following:


PRESET
PATCH NO.
DRAWBARS

MIDI4 SYSTEM
IN SPLIT GATE>OF

4. Now select the IN SPLIT GATE option by doing the following:

   Use the black number 2 [ON/+] and the number 3 [OFF/-] Touch Buttons to turn the IN SPLIT GATE function "ON" or "OFF".

The data chart below explains how this Advanced Feature functions.

IN SPLIT GATE DATA CHART	
***IN SPLIT GATE "OFF"**	If the XB-2 is played from another keyboard via MIDI, only the Upper Manual (right of split) will play - the Keyboard Split is not recognized by the sending instrument even though Keyboard Split on the XB-2 is "ON".
IN SPLIT GATE "ON"	If the XB-2 is played from another keyboard via MIDI and Keyboard Split is "ON", the Upper Manual (right of split) and Lower Manual (left of split) will play as though the XB-2 were being played from its own keyboard.

*default setting

This is a Global Command, and this data CAN NOT be stored to a Preset. To see a total listing of all Global Commands, see the Global Initial Data Table on page 114.

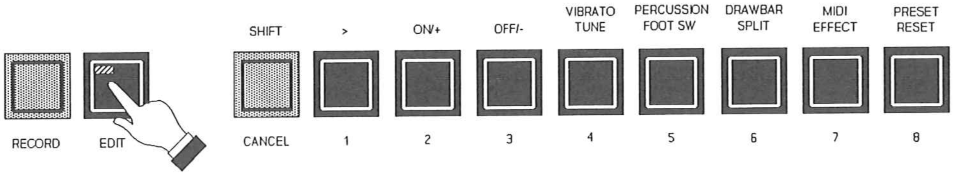
To EXIT this menu, simply touch the EDIT Touch Button.

MIDI5 CHANNEL = EDIT + 7 + SHIFT + SHIFT + SHIFT + SHIFT

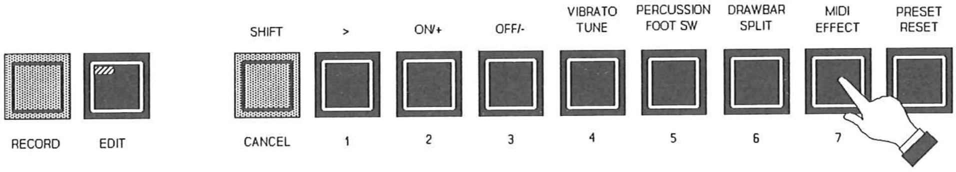
This Menu Page allows you to select MIDI Channels.

To access the MIDI5 CHANNEL Menu Page, do the following:

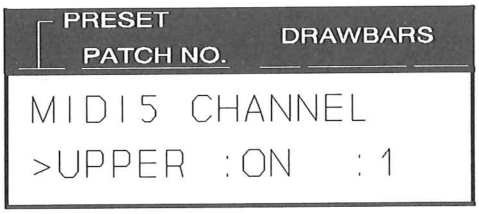
1. Touch the EDIT Touch Button "ON" (red LED lit).


SHIFT
>
ON/+
OFF/-
VIBRATO TUNE
PERCUSSION FOOT SW
DRAWBAR SPLIT
MIDI EFFECT
PRESET RESET
RECORD
EDIT
CANCEL
1
2
3
4
5
6
7
8

2. Touch the black number 7 [MIDI/EFFECT] Touch Button once.


SHIFT
>
ON/+
OFF/-
VIBRATO TUNE
PERCUSSION FOOT SW
DRAWBAR SPLIT
MIDI EFFECT
PRESET RESET
RECORD
EDIT
CANCEL
1
2
3
4
5
6
7

3. Touch the gray SHIFT Touch Button four times. The Information Center Display should show the following:


PRESET
PATCH NO.
DRAWBARS

MIDI5 CHANNEL
>UPPER :ON :1

The data chart below shows the default settings for MIDI Channels.

MIDI CHANNELS - DEFAULT SETTINGS	
UPPER	1
LOWER	2
ZONE1	3
ZONE2	4

4. Now select the MIDI Channel by doing the following:

   Use the black number 1 [>] Select Touch Button to move the Prompter Mark [>] between Manual / Zone selections, "ON / OFF" settings and Channel numbers.

   Use the black number 2 [ON/+] and the number 3 [OFF/-] Touch Buttons to select the Manual / Zone, the "ON / OFF" setting and the Channel number.

The data chart below shows the options for MIDI Channels.

MIDI CHANNEL OPTIONS	
UPPER	1-16
LOWER	1-16
ZONE1	1-16
ZONE2	1-16

This data CAN be stored to a Patch. This means that each Patch can store a different MIDI Channel setting. To see a total listing of all parameters that can be saved to a Patch, see the Parameter Data Table on page 101.

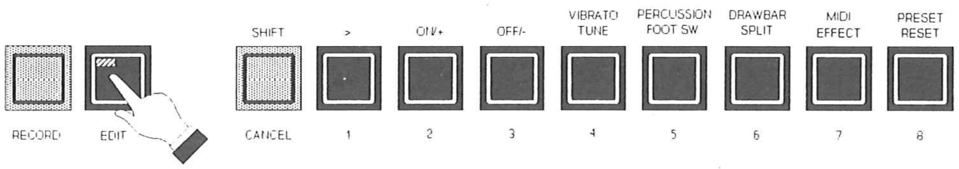
To EXIT this menu, simply touch the EDIT Touch Button.

MIDI6 KEYMAP = EDIT + 7 + SHIFT + SHIFT + SHIFT + SHIFT + SHIFT

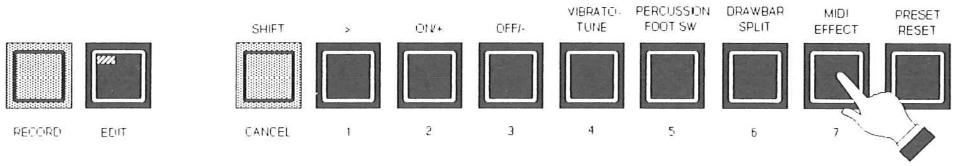
This Menu Page will allow you to set the Low and High note ranges for the Keymap zones. Keymap zones can be set for the following: (1) Upper Manual, (2) Lower Manual, (3) Zone 1, (4) Zone 2.

To access the MIDI6 KEYMAP Menu Page, do the following:

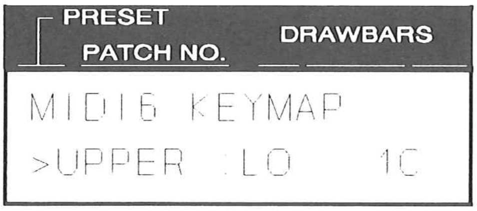
1. Touch the EDIT Touch Button "ON" (red LED lit).


SHIFT
>
ON/+
OFF/-
VIBRATO TUNE
PERCUSSION FOOT SW
DRAWBAR SPLIT
MIDI EFFECT
PRESET RESET
RECORD
EDIT
CANCEL
1
2
3
4
5
6
7
8

2. Touch the black number 7 [MIDI/EFFECT] Touch Button once.


SHIFT
>
ON/+
OFF/-
VIBRATO TUNE
PERCUSSION FOOT SW
DRAWBAR SPLIT
MIDI EFFECT
PRESET RESET
RECORD
EDIT
CANCEL
1
2
3
4
5
6
7

3. Touch the gray SHIFT Touch Button five times. The Information Center Display should show the following:


PRESET
PATCH NO.
DRAWBARS

MIDI6 KEYMAP
>UPPER :LO 1C

3. Now select the Keymap options for each manual by doing the following:

   Use the black number 1 [>] Select Touch Button to move the Prompter Mark [>] between Manual / Zone selections, "LO" and "HI" range selections and Range settings.

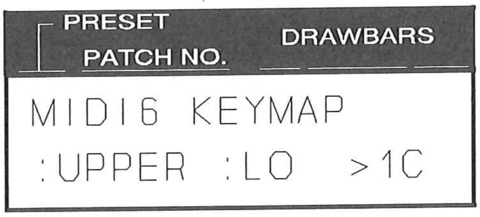
   Use the black number 2 [ON/+] and the number 3 [OFF/-] Touch Buttons to select the Manual / Zone, the "LO / HI" range selection and the Range setting.

You can also change the Keymap ranges by key input.

TRY THIS:

1. Make your Manual / Zone selections using the black number 1 [>] Touch Button to move the Prompter Mark [>] and the black number 2 [ON/+] and black number 3 [OFF/-] Touch Buttons.

2. Touch the black number 1 [>] Touch Button repeatedly until the Prompter Mark [>] is in front of the Range setting. The Information Center Display will look similar to this:



```
MIDI6 KEYMAP
:UPPER :LO   >1C
```

Low Note Range -

With your left hand, touch and hold the gray RECORD Select Touch Button. Continue to Hold the gray RECORD Select Touch Button with your left hand, and with your right hand Touch the key that you want as the lowest key.

Once the key has been touched, the new range will be shown in the Information Center Display.

High Note Range -

Use the black number 1 [>] and the black number 2 [ON/+] and black number 3 [OFF/-] Touch Buttons to change "LO" to "HI" in the Information Center Display. With your left hand, touch and hold the gray RECORD Select Touch Button. Continue to Hold the gray RECORD Select Touch Button with your left hand, and with your right hand Touch the key that you want as the highest key.

Once the key has been touched, the new range will be shown in the Information Center Display.

The data chart below shows the options for MIDI Keymap.

MIDI KEYMAP OPTIONS	
UPPER	1C-6C
LOWER	1C-6C
ZONE1	1C-6C
ZONE2	1C-6C

This data CAN be stored to a Patch. This means that each Patch can store a different MIDI Channel setting. To see a total listing of all parameters that can be saved to a Patch, see the Parameter Data Table on page 101.

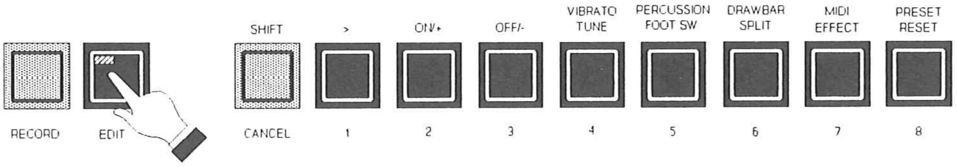
To EXIT this menu, simply touch the EDIT Touch Button.

MIDI7 KEYOCTAVE = EDIT + 7 + SHIFT + SHIFT + SHIFT + SHIFT + SHIFT + SHIFT

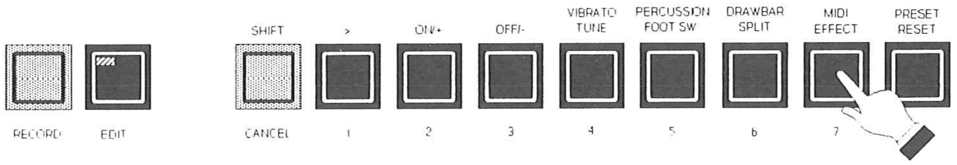
This Menu Page allows the octave range of: (1) Zone 1 or (2) Zone 2 to be changed within ±4 octaves.

To access the MIDI7 KEYOCTAVE Menu Page, do the following:

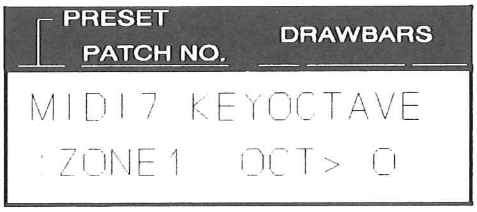
1. Touch the EDIT Touch Button "ON" (red LED lit).


SHIFT
>
ON/+
OFF/-
VIBRATO TUNE
PERCUSSION FOOT SW
DRAWBAR SPLIT
MIDI EFFECT
PRESET RESET
RECORD
EDIT
CANCEL
1
2
3
4
5
6
7
8

2. Touch the black number 7 [MIDI/EFFECT] Touch Button once.


SHIFT
>
ON/+
OFF/-
VIBRATO TUNE
PERCUSSION FOOT SW
DRAWBAR SPLIT
MIDI EFFECT
PRESET RESET
RECORD
EDIT
CANCEL
1
2
3
4
5
6
7

3. Touch the gray SHIFT Touch Button six times. The Information Center Display should show the following:


PRESET
PATCH NO.
DRAWBARS

MIDI7 KEYOCTAVE
:ZONE1 OCT> 0

3. To change the Key Octave options for each manual, do the following:

Use the black number 1 [>] Select Touch Button to move the Prompter Mark [>] between Manual / Zone selections, "LO" and "HI" range selections and Range settings.

Use the black number 2 [ON/+] and the number 3 [OFF/-] Touch Buttons to select the Manual / Zone, the LO/HI setting and the Octave setting.

The data chart below shows the options for MIDI Keymap.

MIDI KEYOCTAVE OPTIONS	
Manual	**Octaves**
ZONE1	-4~0~+4
ZONE2	-4~0~+4

This data CAN be stored to a Patch. To see a total listing of all parameters that can be saved to a Patch, see the Parameter Data Table on page 101.

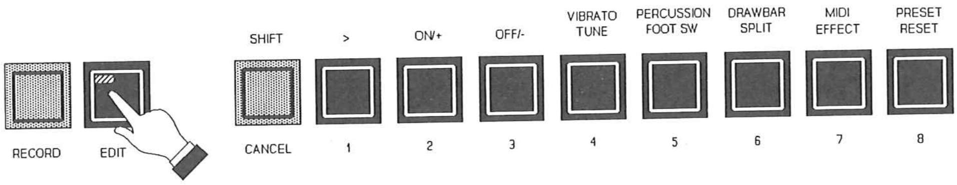
To EXIT this menu, simply touch the EDIT Touch Button.

MIDI8 PROGRAM = EDIT + 7 + SHIFT + SHIFT + SHIFT + SHIFT + SHIFT + SHIFT + SHIFT

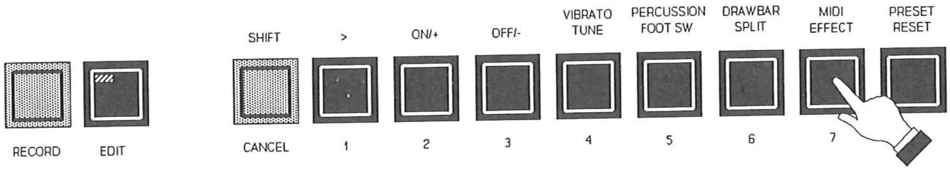
This Menu Page will allow you to set the Program Numbers for the following: (1) Upper Manual, (2) Lower Manual, (3) Zone 1, (4) Zone 2.

To access the MIDI8 PROGRAM Menu Page, do the following:

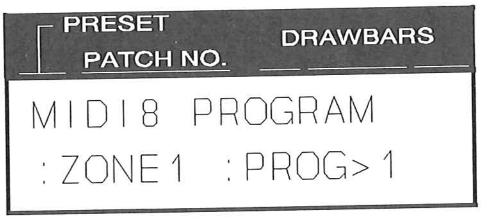
1. Touch the EDIT Touch Button "ON" (red LED lit).


SHIFT
>
ON/+
OFF/-
VIBRATO TUNE
PERCUSSION FOOT SW
DRAWBAR SPLIT
MIDI EFFECT
PRESET RESET
RECORD
EDIT
CANCEL
1
2
3
4
5
6
7
8

2. Touch the black number 7 [MIDI/EFFECT] Touch Button once.


SHIFT
>
ON/+
OFF/-
VIBRATO TUNE
PERCUSSION FOOT SW
DRAWBAR SPLIT
MIDI EFFECT
PRESET RESET
RECORD
EDIT
CANCEL
1
2
3
4
5
6
7

3. Touch the gray SHIFT Touch Button seven times. The Information Center Display should show the following:


PRESET
PATCH NO.
DRAWBARS

MIDI8 PROGRAM
:ZONE1 :PROG>1

4. Now select the Program Number options for each manual by doing the following:

   Use the black number 1 [>] Select Touch Button to move the Prompter Mark [>] between Manual / Zone selections, Program and Variation selections and Program Number selections.

   Use the black number 2 [ON/+] and the number 3 [OFF/-] Touch Buttons to select the Manual / Zone, Program or Variation and the Program Number.

The data chart below shows the options for MIDI Program Numbers.

MIDI PROGRAM NUMBER OPTIONS		
Manual	**Program #**	**Variation #**
ZONE1	1 - 128	0 - 127
ZONE2	1 - 128	0 - 127

This data CAN be stored to a Patch. To see a total listing of all parameters that can be saved to a Patch, see the Parameter Data Table on page 101.

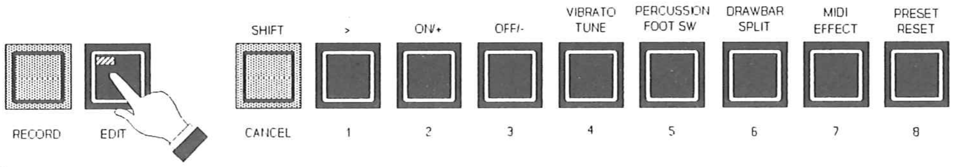
To EXIT this menu, simply touch the EDIT Touch Button.

MIDI10 VEL CURVE = EDIT + 7 + SHIFT + SHIFT + SHIFT + SHIFT + SHIFT + SHIFT + SHIFT + SHIFT + SHIFT

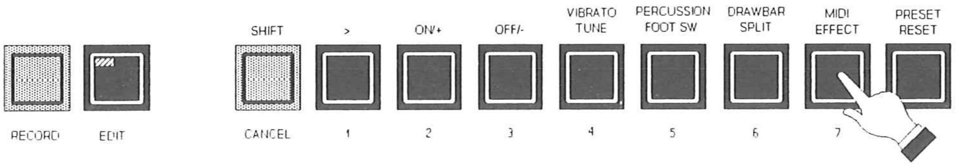
The XB-2's keyboard transmits MIDI Note Velocity data, and you can select from 1 of 6 different Velocity Curves as well as "OFF". This Menu Page will allow you to select the Velocity Curve you wish for Zone 1 and Zone 2.

To access the MIDI10 VEL CURVE Menu Page, do the following:

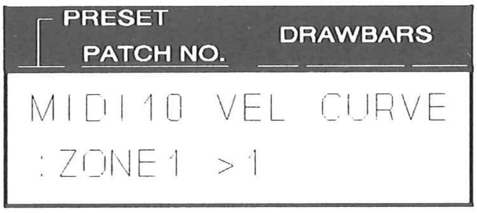
1. Touch the EDIT Touch Button "ON" (red LED lit).


SHIFT
>
ON/+
OFF/-
VIBRATO TUNE
PERCUSSION FOOT SW
DRAWBAR SPLIT
MIDI EFFECT
PRESET RESET
RECORD
EDIT
CANCEL
1
2
3
4
5
6
7
8

2. Touch the black number 7 [MIDI/EFFECT] Touch Button once.


SHIFT
>
ON/+
OFF/-
VIBRATO TUNE
PERCUSSION FOOT SW
DRAWBAR SPLIT
MIDI EFFECT
PRESET RESET
RECORD
EDIT
CANCEL
1
2
3
4
5
6
7

3. Touch the gray SHIFT Touch Button nine times. The Information Center Display should show the following:


PRESET
PATCH NO.
DRAWBARS

MIDI10 VEL CURVE
:ZONE1 >1

4. Now select the Velocity Curve by doing the following:

   Use the black number 1 [>] Select Touch Button to move the Prompter Mark [>] between Zone selections and Velocity Curve selections.

   Use the black number 2 [ON/+] and the number 3 [OFF/-] Touch Buttons to select the Zone and Velocity Curve.

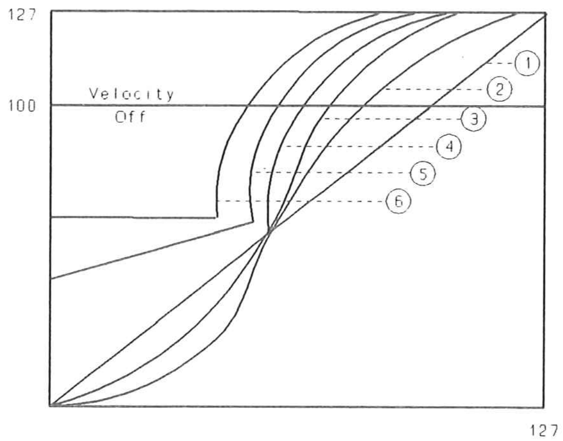
The data chart below shows the options for the MIDI Velocity Curve Advanced Feature.

MIDI VELOCITY CURVE SELECTIONS	
Zone 1	**Zone 2**
*1	*1
2	2
3	3
4	4
5	5
6	6
OFF	OFF

*default setting

The following chart shows the differences among each of the six curves.

MIDI OUT VELOCITY AND AFTERTOUCH CURVES



This data CAN be stored to a Patch. To see a total listing of all parameters that can be saved to a Patch, see the Parameter Data Table on page 101.

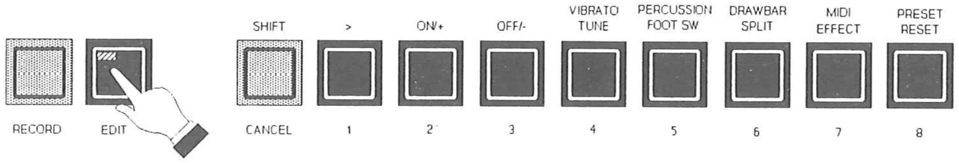
To EXIT this menu, simply touch the EDIT Touch Button.

MIDI11 CONTROL = EDIT + 7 + SHIFT + SHIFT + SHIFT + SHIFT + SHIFT + SHIFT + SHIFT + SHIFT + SHIFT + SHIFT

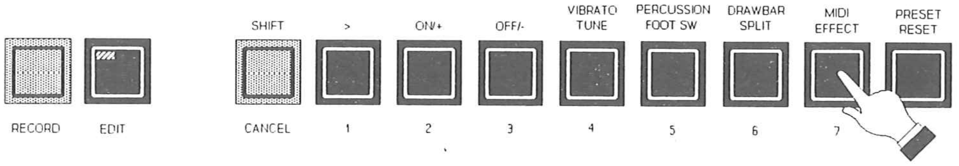
This Menu Page has two functions: (1) Allows you to set the Controller number for the Foot Switch, Modulation Wheel and Expression Pedal, (2) Allows you to select the controller code you want to use to change between the Slow and Fast speeds of either the internal electronic Leslie or an external Leslie Speaker cabinet.

To access the MIDI11 CONTROL Menu Page, do the following:

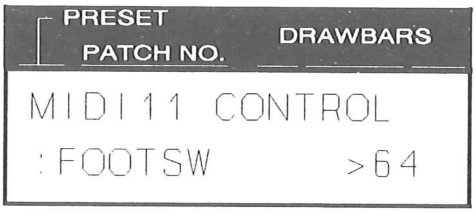
1. Touch the EDIT Touch Button "ON" (red LED lit).


SHIFT
>
ON/+
OFF/-
VIBRATO TUNE
PERCUSSION FOOT SW
DRAWBAR SPLIT
MIDI EFFECT
PRESET RESET
RECORD
EDIT
CANCEL
1
2
3
4
5
6
7
8

2. Touch the black number 7 [MIDI/EFFECT] Touch Button once.


SHIFT
>
ON/+
OFF/-
VIBRATO TUNE
PERCUSSION FOOT SW
DRAWBAR SPLIT
MIDI EFFECT
PRESET RESET
RECORD
EDIT
CANCEL
1
2
3
4
5
6
7

3. Touch the gray SHIFT Touch Button ten times. The Information Center Display should show the following:


PRESET
PATCH NO.
DRAWBARS

MIDI11 CONTROL
:FOOTSW >64

4. Now select the Controller options by doing the following:

Use the black number 1 [>] Select Touch Button to move the Prompter Mark [>] between Controller selections and Controller Number selections.

Use the black number 2 [ON/+] and the number 3 [OFF/-] Touch Buttons to make Controller selections and Controller Number selections.

The data chart below shows the options you may select for the MIDI Controller Advanced Feature.

MIDI CONTROLLER OPTIONS	
Foot Switch	0-127 (default setting 64)
Modulation Wheel	0-127 (default setting 1)
Expression Pedal	0-127 (default setting 7)
Leslie Slow/Fast Code	0-127 (default setting 92)

These are Global Commands, and this data CAN NOT be stored to a Preset. To see a total listing of all Global Commands, see the Global Initial Data Table on page 114.

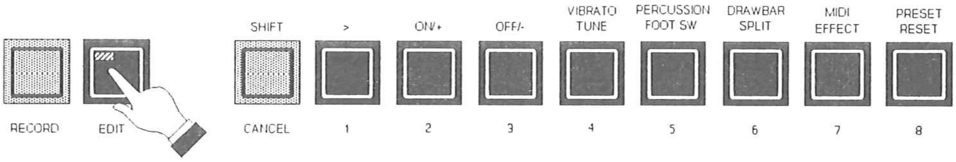
To EXIT this menu, simply touch the EDIT Touch Button.

MIDI12 FILTER = EDIT + 7 + SHIFT + SHIFT + SHIFT + SHIFT + SHIFT + SHIFT + SHIFT + SHIFT + SHIFT + SHIFT + SHIFT

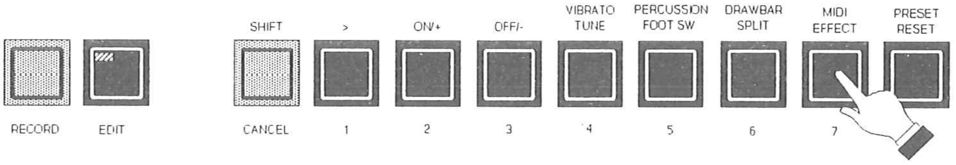
There are three Menu Pages to this Advanced Feature: (1) PROGNO (Program Number Filter), (2) VOL.OUT (Volume Out Filter) and (3) DRAWBAR (Drawbar Filter).

To access the MIDI12 FILTER Advanced Feature, do the following:

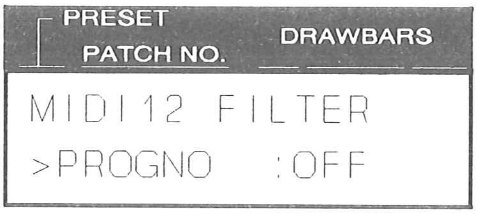
1. Touch the EDIT Touch Button "ON" (red LED lit).


SHIFT
>
ON/+
OFF/-
VIBRATO TUNE
PERCUSSION FOOT SW
DRAWBAR SPLIT
MIDI EFFECT
PRESET RESET
RECORD
EDIT
CANCEL
1
2
3
4
5
6
7
8

2. Touch the black number 7 [MIDI/EFFECT] Touch Button once.


SHIFT
>
ON/+
OFF/-
VIBRATO TUNE
PERCUSSION FOOT SW
DRAWBAR SPLIT
MIDI EFFECT
PRESET RESET
RECORD
EDIT
CANCEL
1
2
3
4
5
6
7

3. Touch the gray SHIFT Touch Button eleven times. The Information Center Display should show the following:


PRESET
PATCH NO.
DRAWBARS

```
MIDI12 FILTER
>PROGNO   :OFF
```

4. To change the MIDI Filter options, do the following:

   Use the black number 1 [>] Select Touch Button to move the Prompter Mark [>] between MIDI Filter selections and "ON / OFF" settings.

   Use the black number 2 [ON/+] and the number 3 [OFF/-] Touch Buttons to select the MIDI Filter and the "ON / OFF" setting.

The following pages will explain each of the MIDI Filter Advanced Features.

PROGNO - Program Number Filter

Normally, when a Preset is engaged, a MIDI program number is sent. At times, it may be desired to not send the MIDI program number when a Preset is engaged. The MIDI Program Number Filter Advanced Feature allows you to prevent the MIDI Program Number from being sent when a Preset is engaged. This Menu Page will allow you to turn "ON" or "OFF" the Program Number Filter Advanced Feature.

To turn "ON" the MIDI Program Number Filter, Touch the black number 2 [ON/+] Touch Button.

To turn "OFF" the MIDI Program Number Filter, Touch the black number 2 [OFF/+] Touch Button.

VOL.OUT - Volume Out Filter

This Menu Page will allow you to turn "ON" or "OFF" the MIDI Volume Out Filter. When this Advanced Feature is "ON", MIDI Volume data will not be transmitted.

To turn "ON" the MIDI Volume Out Filter, Touch the black number 2 [ON/+] Touch Button.

To turn "OFF" the MIDI Volume Out Filter, Touch the black number 2 [OFF/+] Touch Button.

DRAWBAR - Drawbar Filter

This Menu Page will allow you to turn "ON" or "OFF" the Drawbar Filter. This Advanced Feature will allow Drawbar changes to be recognized by a MIDI Sequencer that has the capability to save MIDI controller changes. You can also send Drawbar data changes to another XB-2 that is connected via MIDI.

NOTE: If you connect two XB-2's together via MIDI, both XB-2's must have Version 2.00 software before this Advanced Feature will work.

To turn "ON" the MIDI Drawbar Filter, Touch the black number 2 [ON/+] Touch Button.

To turn "OFF" the MIDI Drawbar Filter, Touch the black number 2 [OFF/+] Touch Button.

These are Global Commands, and this data CAN NOT be stored to a Preset. To see a total listing of all Global Commands, see the Global Initial Data Table on page 115.

To EXIT this menu, simply touch the EDIT Touch Button.

MIDI Implementation Chart

FUNCTION		TRANSMITTED	RECOGNIZED	REMARKS
Basic Channel	Default	1	1	UPPER CHANNEL
	Changed	1 - 16	1 - 16	
Mode	Default	MODE 3	MODE 3	
	Message	X	X	
	Altered	********		
Note		36 - 96	36 - 96	TRANSPOSE ± 6
Number:	True Voice	*********		
Velocity	Note ON	O	X	
	Note OFF	X	X	
After Touch	Keys	X	X	
	Channels	X	X	
Pitch Bend		O	O	
CONTROL CHANGE	Bank Select 0	O	X	ONLY ZONE CHANNEL
	Modulation 1	O	X	
	Press Type 2	X	O	EXPRESSION
	Main Volume 7	O	O	EXPRESSION
	Expression 11	X	O	EXPRESSION
	Tremolo Depth 92	O	O	LESLIE SLOW/FAST
	Hold 1 64	O	O	DAMPER
	NRPN LSB 98	O	O	IF NRPN SWITCH ON
	NRPN MSB 99	O	O	
	RPN LSB 98	O	O	BEND SENSITIVITY
	RPN MSB 99	O	O	
	Data Entry 6	O	O	
	UM Drawbar 80	O	O	IF DRAWBAR FILTER OFF
	LM Drawbar 81	O	O	IF DRAWBAR FILTER OFF
PROGRAM CHANGE		O 1 - 33	O 1 - 33	IF PROGRAM # FILTER OFF
	:True #	*****************	1 - 33	
SYSTEM EXCLUSIVE		O	O	
COMMON	:Song Pos	X	X	
	:Song Sel	X	X	
	:Tune	X	X	
SYSTEM REAL TIME	:Clock	X	X	
	:Commands	O START,STOP	X	BY FOOT SWITCH
AUX MESSAGES	:Local ON/OFF	X	X	
	:All Notes OFF	O	O	(123)
	:Active Sense	O	O	
	:Reset	X	X	
Notes		LOWER CHANNEL :Default 2 1 - 16 ZONE1 CHANNEL :Default 3 1 - 16 ZONE1 CHANNEL :Default 4 1 - 16		

MODE 1: OMNI ON, POLY   MODE 2: OMNI ON, MONO   O : YES
MODE 3: OMNI OFF, POLY   MODE 4: OMNI OFF, MONO   X : NO

MIDI Implementation (Each Channel)

	FUNCTION		UPPER		LOWER		ZONE1		ZONE2		
			OUT	IN	OUT	IN	OUT	IN	OUT	IN	
1	MIDI CHANNEL		1 ~ 16	1 ~ 16	1 ~ 16	1 ~ 16	1 ~ 16	X	1 ~ 16	X	
2	PROGRAM NUMBER		1 ~ 33	1 ~ 33	X	X	1 ~ 128	X	1 ~ 128	X	UPPER PRESET NO.
3	PITCH BEND		0	0	0	0	0	X	0	X	
4	CONTROL CHANGE	VARIATION 0	X	X	X	X	0	X	0	X	
		MOD.CODE	0	X	0	X	0	X	0	X	
		EXP.CODE	0	0	0	X	0	X	0	X	
		LES S/F CODE	0	0	X	X	X	X	X	X	LESLIE S/F
		FOOT SW CODE	0	X	0	X	0	X	0	X	
		UM DRAWBAR 80	0	0	X	X	X	X	X	X	
		LM DRAWBAR 81	0	0	X	X	X	X	X	X	
		NRPN LSB 98	0	0	X	X	X	X	X	X	
		NRPN MSB 99	0	0	X	X	X	X	X	X	
		NPRN DATA 6	0	0	X	X	X	X	X	X	
		RPN LSB 100	0	0	0	0	0	X	0	X	
		RPN MSB 101	0	0	0	0	0	X	0	X	
		ALL NOTE OFF 123	0	0	0	0	0	X	0	X	

MIDI DRAWBAR DATA

CONTROL CHANGE

Bx 50(80)yy:UPPER
Bx 51(81)yy:LOWER
x:upper channel number
yy:data

UPPER / LOWER DATA MAP

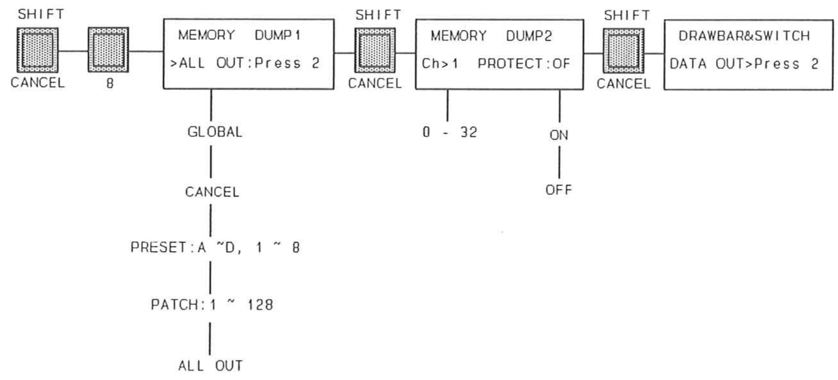
	DATA:yy								
DRAWBAR	16'	5 1/3'	8'	4'	2 2/3'	2'	1 3/5'	1 1/3'	1'
Level 0	00h (0)	09h (9)	12h (18)	1Bh (27)	24h (36)	2Dh (45)	36h (54)	3Fh (63)	48h (72)
Level 1	01h (1)	0Ah (10)	13h (19)	1Ch (28)	25h (37)	2Eh (46)	37h (55)	40h (64)	49h (73)
Level 2	02h (2)	0Bh (11)	14h (20)	1Dh (29)	26h (38)	2Fh (47)	38h (56)	41h (65)	4Ah (74)
Level 3	03h (3)	0Ch (12)	15h (21)	1Eh (30)	27h (39)	30h (48)	39h (57)	42h (66)	4Bh (75)
Level 4	04h (4)	0Dh (13)	16h (22)	1Fh (31)	28h (40)	31h (49)	3Ah (58)	43h (67)	4Ch (76)
Level 5	05h (5)	0Eh (14)	17h (23)	20h (32)	29h (41)	32h (50)	3Bh (59)	44h (68)	4Dh (77)
Level 6	06h (6)	0Fh (15)	18h (24)	21h (33)	2Ah (42)	33h (51)	3Ch (60)	45h (69)	4Eh (78)
Level 7	07h (7)	10h (16)	19h (25)	22h (34)	2Bh (43)	34h (52)	3Dh (61)	46h (70)	4Fh (79)
Level 8	08h (8)	11h (17)	1Ah (26)	23h (35)	2Ch (44)	35h (53)	3Eh (62)	47h (71)	50h (80)

MIDI NRPN DATA

Bx 62h(98) 00 x:UPPER CHANNEL
Bx 63h(99) aa aa:NRPN CODE
Bx 06h(6) bb bb:NRPN DATA

No.	FUNCTION	CODE hex(dec)	DATA hex
1	Leslie S/F	00 (0)	OFF:00 ON:7F
2	Sustain Upper	06 (6)	OFF:00 ON:7F
3	Sustain Lower	07 (7)	OFF:00 ON:7F
4	Leslie ON/OFF	09 (9)	OFF:00 ON:7F
5	Percussion 2nd	12 (18)	OFF:00 ON:7F
6	Percussion 3rd	13 (19)	OFF:00 ON:7F
7	Percussion Soft	15 (21)	OFF:00 ON:7F
8	Percussion Decay	16 (22)	S:00 F:7F
9	Vibrato Upper	17 (23)	OFF:00 ON:7F
10	Vibrato Lower	18 (24)	OFF:00 ON:7F
11	Priority on Drawbar	19 (25)	OFF:00 ON:7F
12	Sustain Mode Upper	1C (28)	SHORT:00 MID:01 LONG:02
13	Sustain Mode Lower	1D (29)	SHORT:00 MID:01 LONG:02
14	Drawbar Type Upper	38 (56)	B-TYPE:00 MELLOW:01 BRITE:02
15	Drawbar Type Lower	39 (57)	B-TYPE:00 MELLOW:01 BRITE:02
16	Drawbar Attack Upper	3B (59)	SLOW ATTACK:00 NO CLICK:01 SOFT CLICK:02 NORMAL CLICK:03 MAX CLICK:04
17	Drawbar Attack Lower	3C (60)	SLOW ATTACK:00 NO CLICK:01 SOFT CLICK:02 NORMAL CLICK:03 MAX CLICK:04
18	Vibrato Speed	3F (63)	SLOW:00 MID:01 NORMAL:02 MIDFAST:03 FAST:04
19	Vibrato Mode	45 (69)	V1:00 V2:01 V3:02 C1:03 C2:04 C3:05
20	VIBRATO ON Touch Tab	46 (70)	OFF:00 ON:7F
21	Percussion Touch	57 (87)	OFF:00 ON:7F
22	Percussion Velocity	58 (88)	OFF:00 ON:7F
23	Percussion Level	59 (89)	1 ~ 16:00 ~ 0F
24	Percussion Draw. Cancel	5A (90)	OFF:00 ON:7F
25	Drawbar F.Back Low	5B (91)	1C ~ 2C:00 ~ 0C
26	Drawbar F.Back High	5C (92)	4G ~ 5C:2B ~ 30
27	Split ON/OFF	69 (105)	OFF:00 ON:7F
28	Split Key	6A (106)	1C ~ 6C:00 ~ 3C
29	Split Octave	6B (107)	NORMAL:00 UP:01
30	Split LM Cancel	6C (108)	OFF:00 ON:7F
31	Over Drive ON/OFF	6D (109)	OFF:00 ON:7F
32	Leslie Slow Speed	6E (110)	15 ~ 498rpm:00 ~ 7F
33	Leslie Fast Speed	6F (111)	15 ~ 498rpm:00 ~ 7F
34	Leslie Rise Time	70 (112)	0.1 ~ 12.8s:00 ~ 7F
35	Leslie Fall Time	71 (113)	0.1 ~ 12.8s:00 ~ 7F
36	Patch Number	72 (114)	1 ~ 128:00 ~ 7F
37	Percussion Key Track	73 (115)	OFF:00 ON:7F
38	Reverb Mode	74 (116)	ROOM:00 LIVE:01 HALL:02 CHURCH:03

➤ Special MIDI Features


SHIFT
CANCEL
8
MEMORY DUMP1
>ALL OUT:Press 2
GLOBAL
CANCEL
PRESET:A ~D, 1 ~ 8
PATCH:1 ~ 128
ALL OUT
SHIFT
CANCEL
MEMORY DUMP2
Ch>1 PROTECT:OF
0 - 32
ON
OFF
SHIFT
CANCEL
DRAWBAR&SWITCH
DATA OUT>Press 2

These Advanced Feature Menus allow you to make the following changes to the XB-2's Presets:

1. Data Out -
   Allows you to transmit data to another XB-2 or to an outboard storage device such as a MIDI sequencer or a personal computer with special MIDI software.

2. Protect "ON" / "OFF" -
   Allows you to protect the data stored in the Patches so that it cannot be overwritten by accident.

3. Drawbar & Switch MIDI OUT -
   Allows you to send the current Drawbar and Switch (Touch Tab, Menu parameters, etc.) registration to a Sequencer in preparation for playing back a Sequence.

The following pages give a more detailed explanation of how these Advanced Feature Menus work.

MEMORY DUMP - DATA OUT = CANCEL & 8

You can transmit data to another XB-2 or to an outboard storage device such as a MIDI sequencer or a personal computer with special MIDI software.

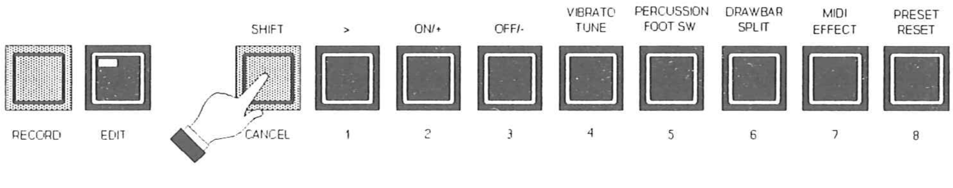
To send a Memory Dump, do the following:

1. Using a standard MIDI cable, connect the XB-2 MIDI OUT to the MIDI in of a receiving XB-2 or other outboard storage device (sequencer or computer with special MIDI software).

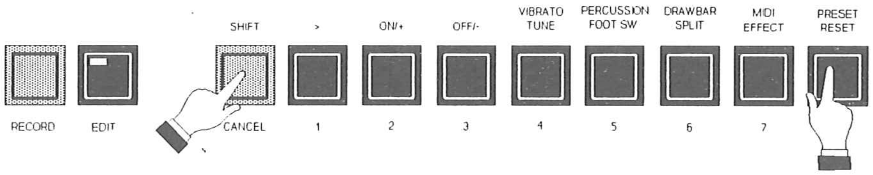
2. Set up the receiving device to receive data.

3. Choose the Dump channel you want to transmit on by using the DATA PROTECT Advanced Feature. This feature is the next screen in the Memory Dump Menu and is described starting on page 168.

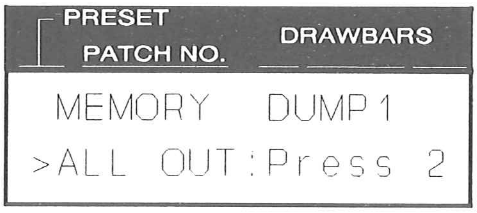
4. With your left hand, touch and hold the gray CANCEL Touch Button.


SHIFT
>
ON/+
OFF/-
VIBRATO TUNE
PERCUSSION FOOT SW
DRAWBAR SPLIT
MIDI EFFECT
PRESET RESET
RECORD
EDIT
CANCEL
1
2
3
4
5
6
7
8

5. While touching and holding the gray CANCEL Touch Button, with your right hand touch the black number 8 (PRESET/RESET) Touch Button once.


SHIFT
>
ON/+
OFF/-
VIBRATO TUNE
PERCUSSION FOOT SW
DRAWBAR SPLIT
MIDI EFFECT
PRESET RESET
RECORD
EDIT
CANCEL
1
2
3
4
5
6
7

The Information Center Display should look similar to this:


PRESET
PATCH NO.
DRAWBARS

```
MEMORY   DUMP 1
>ALL OUT:Press 2
```

6. Now select the Memory Dump option you wish by doing the following:

   Use the black number 1 [>] Select Touch Button to move the Prompter Mark [>] between Memory Dump selections and the "Press 2" selection.

   When the Prompter Mark is in front of the Memory Dump selections, use the black number 2 [ON/+] and the number 3 [OFF/-] Touch Buttons to select the Memory Dump operation you wish to do.

   When the Prompter Mark is in front of the "Press 2" selection, use the black number 2 [ON/+] Touch Button to start transmitting.

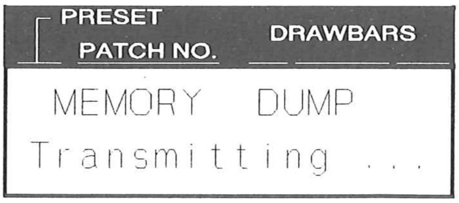
The data chart below explains how this Advanced Feature functions.

MEMORY DUMP DATA CHART

Option	Action
ALL OUT	All data is sent
GLOBAL	Only Global Data (data which cannot be stored to a Patch) is sent.
CANCEL	Only Cancel Data (no Presets active) is sent.
PRESET	Individual Preset numbers are sent. Use the black number 2 **[ON/+]** and the number 3 **[OFF/-]** Touch Buttons to select the individual Preset you want to send.
PATCH	Individual Patch numbers are sent. Use the black number 2 **[ON/+]** and the number 3 **[OFF/-]** Touch Buttons to select the individual Patch you want to send.

NOTE: When either "PRESET" or "PATCH" is selected from the Memory Dump menu, use the black number 1 [>] Select Touch Button to move the Prompter Mark [>] between Preset or Patch selections and Number selections.

5. When you have made your Memory Dump selection, touch the black number 2 [ON/+] Touch Button and the Information Center Display should look similar to this:



```
MEMORY  DUMP
Transmitting ...
```

6. When the transfer is completed, the Information Center Display will flash once, "Data Completed".

To EXIT this menu, simply touch the CANCEL Touch Button.

To receive a Memory Dump, do the following:

1. Using a standard MIDI cable, connect the XB-2 MIDI IN to the MIDI OUT of a sending XB-2 or other outboard storage device (sequencer or computer with special MIDI software).

2. Select the correct Dump channel on the XB-2. If you are receiving data from a MIDI recorder, set the Dump channel to the same one you used to save the data to the MIDI recorder. If you are receiving from another XB-2, set both XB-2's to the same Dump channel.

3. Set up the sending device to transmit data, and start transmitting.

4. The Information Center Display will show "Receiving Data" as soon as it starts receiving.

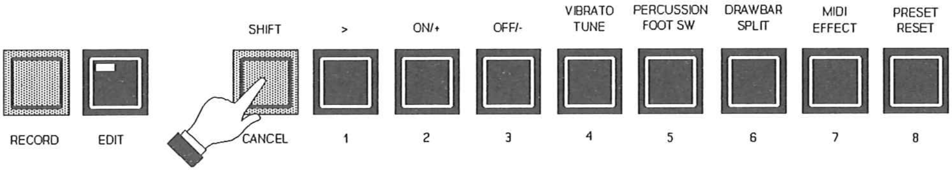
4. When the transfer is completed, the display will flash once, "Data Completed".

MEMORY DUMP - DRAWBAR & SWITCH DATA OUT = CANCEL & 8 + SHIFT + SHIFT

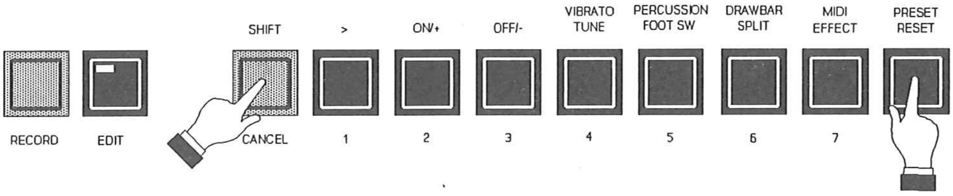
This Menu Page allows you to send the current Drawbar and Switch (Touch Tab, Menu parameters, etc.) registration to a Sequencer in preparation for playing back a Sequence.

To access the MEMORY DUMP - DRAWBAR & SWITCH DATA OUT Menu Page, do the following:

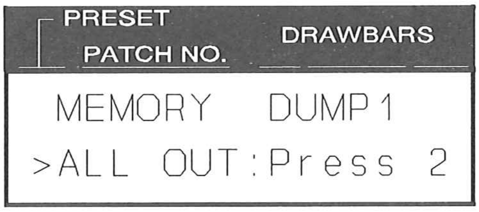
1. With your left hand, touch and hold the gray CANCEL Touch Button.


SHIFT
>
ON/+
OFF/-
VIBRATO TUNE
PERCUSSION FOOT SW
DRAWBAR SPLIT
MIDI EFFECT
PRESET RESET
RECORD
EDIT
CANCEL
1
2
3
4
5
6
7
8

2. While touching and holding the gray CANCEL Touch Button, with your right hand touch the black number 8 (PRESET/RESET) Touch Button once.

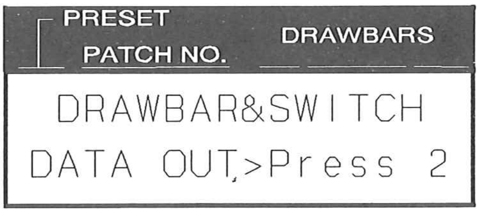

SHIFT
>
ON/+
OFF/-
VIBRATO TUNE
PERCUSSION FOOT SW
DRAWBAR SPLIT
MIDI EFFECT
PRESET RESET
RECORD
EDIT
CANCEL
1
2
3
4
5
6
7

The Information Center Display should look similar to this:


PRESET
PATCH NO.
DRAWBARS

MEMORY DUMP 1
>ALL OUT:Press 2

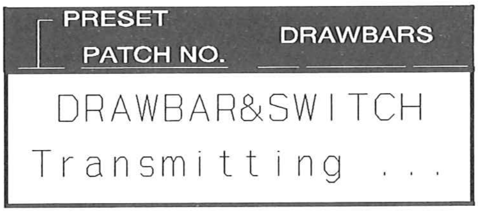
3. Touch the gray SHIFT Touch button twice. The Information Center Display should show the following:


PRESET
PATCH NO.
DRAWBARS

DRAWBAR&SWITCH
DATA OUT>Press 2

3. Make sure that the organ is connected to a MIDI Data recorder before you send or receive MIDI data and that the MIDI recorder is ready to receive data (RECORD).

4. Touch the black number 2 Touch Button to start the data DUMP to the MIDI Data recorder. The Information Center Display should look like this:



```
DRAWBAR&SWITCH
Transmitting ...
```

When all information has been sent, the Information Center Display will once again show, "DATA OUT>Press 2".

To EXIT this menu, simply touch the CANCEL Touch Button.

PACKETS

PNH	PNL	DATA
00h	01h~41h	ALL DATA (PRESET, PATCH, GLOBAL, CANCEL)
01h	00h	GLOBAL DATA
02h	00h	CANCEL DATA
03h	00h	PRESET A-1
03h	01h	A-2
03h	02h	A-3
03h	03h	A-4
03h	04h	A-5
03h	05h	A-6
03h	06h	A-7
03h	07h	A-8
03h	08h	B-1
03h	09h	B-2
03h	0Ah	B-3
03h	0Bh	B-4
03h	0Ch	B-5
03h	0Dh	B-6
03h	0Eh	B-7
03h	0Fh	B-8
03h	10h	C-1
03h	11h	C-2
03h	12h	C-3
03h	13h	C-4
03h	14h	C-5
03h	15h	C-6
03h	16h	C-7
03h	17h	C-8
03h	18h	D-1
03h	19h	D-2
03h	1Ah	D-3
03h	1Bh	D-4
03h	1Ch	D-5
03h	1Dh	D-6
03h	1Eh	D-7
03h	1Fh	D-8
04h	00h	PATCH 1
04h	01h	2
04h	02h	3
04h	03h	4
04h	04h	5
04h	05h	6
04h	06h	7
04h	07h	8
04h	08h	9
04h	09h	10
04h	0Ah	11
04h	0Bh	12
04h	0Ch	13
04h	0Dh	14
04h	0Eh	15
04h	0Fh	16
04h	10h	17
04h	11h	18
04h	12h	19
04h	13h	PATCH 20
04h	14h	21
04h	15h	22
04h	16h	23
04h	17h	24
04h	18h	25
04h	19h	26
04h	1Ah	27
04h	1Bh	28
04h	1Ch	29
04h	1Dh	30
04h	1Eh	31
04h	1Fh	32
04h	20h	33
04h	21h	34
04h	22h	35
04h	23h	36
04h	24h	37
04h	25h	38
04h	26h	39
04h	27h	40
04h	28h	41
04h	29h	42
04h	2Ah	43
04h	2Bh	44
04h	2Ch	45
04h	2Dh	46
04h	2Eh	47
04h	2Fh	48
04h	30h	49
04h	31h	50
04h	32h	51
04h	33h	52
04h	34h	53
04h	35h	54
04h	36h	55
04h	37h	56
04h	38h	57
04h	39h	58
04h	3Ah	59
04h	3Bh	60
04h	3Ch	61
04h	3Dh	62
04h	3Eh	63
04h	3Fh	64
04h	40h	65
04h	41h	66
04h	42h	67
04h	43h	68
04h	44h	69
04h	45h	70
04h	46h	71
04h	47h	72
04h	48h	73
04h	49h	74
04h	4Ah	75
04h	4Bh	76
04h	4Ch	77
04h	4Dh	PATCH 78
04h	4E	79
04h	4F	80
04h	50	81
04h	51	82
04h	52	83
04h	53	84
04h	54	85
04h	55	86
04h	56	87
04h	57	88
04h	58	89
04h	59	90
04h	5A	91
04h	5B	92
04h	5C	93
04h	5D	94
04h	5E	95
04h	5F	96
04h	60	97
04h	61	98
04h	62	99
04h	63	100
04h	64	101
04h	65	102
04h	66	103
04h	67	104
04h	68	105
04h	69	106
04h	6A	107
04h	6B	108
04h	6C	109
04h	6D	110
04h	6E	111
04h	6F	112
04h	70	113
04h	71	114
04h	72	115
04h	73	116
04h	74	117
04h	75	118
04h	76	119
04h	77	120
04h	78	121
04h	79	122
04h	7A	123
04h	7B	124
04h	7C	125
04h	7D	126
04h	7E	127
04h	7F	128

Memory Dump - System Exclusive Information

1. FORMAT

F0H	System Exclusive
55H	SUZUKI I.D. Number
[DID]	Device No. (XB-2 - memory dump channel)
10h	Model I.D. Number (high)
01h	Model I.D. Number (low)
11h	Command (Data Packet)
[BODY]	DATA
F7h	End of Exclusive

2. BODY

02H	Data Type (02H:User Program)
[PNH]	Packet Number (high) 0001~7F7F
[PNL]	Packet Number (low)
[DATA]	256 Byte ASCII (128Byte data)
[SUM]	Check Sum (7bit) 256Byte ASCII XOR

3. ACKNOWLEDGE

F0H	System Exclusive	
55H	SUZUKI I.D.Number	
[DID]	Device No. (XB-2 - memory dump channel)	
10h	Model I.D. Number (high)	
01h	Model I.D. Number (low)	
14h	Command Acknowledge	
AKH	AK Type	00H:Normal
		05H:Check Sum Error
		06H:Protect Sw On
[PNH]	Packet Number (high)	
[PNL]	Packet Number (low)	
F7H	End of Exclusive	

4. HAND SHAKE COMMUNICATION (ONE WAY TRANSFER)

Master(XB-2)	Slave(XB-2)	
Data Out Packet 1	—>	
	<—	Acknowledge
Data Out Packet 2	—>	
	<—	Acknowledge
Data Out Packet 65	—>	
	<—	Acknowledge

The organ will wait for the data for 20 ms if no message is received and transmit the next data of the packet number. (ONE WAY TRANSFER)

Reset

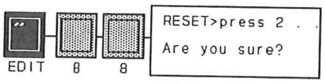
RESET

There are two ways to Reset the XB-2:

1. Selective Reset -
   Allows you to reset the Advanced Features parameters accessed by the EDIT and CANCEL Touch Buttons back to factory settings.

2. All Reset -
   Allows you to clear all Presets and Patches and returns the XB-2 to factory default settings.

➤ Selective Reset



```
RESET>press 2 . .
Are you sure?
```

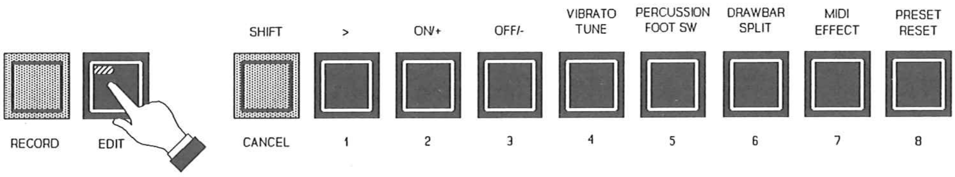
This Advanced Feature resets the Advanced Features parameters accessed by the EDIT and CANCEL Touch Button back to factory settings.

The following pages give a more detailed explanation of how this Advanced Feature works.

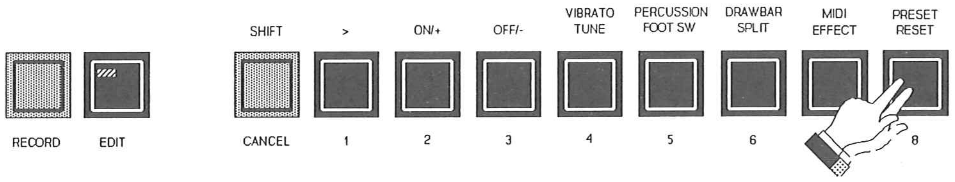
SELECTIVE RESET = EDIT + 8 + 8 + 2

CAUTION - The Selective Reset procedure resets only the CANCEL parameters back to default settings. It is recommended that the Selective Reset operation be done before you create your own Patches or Presets.

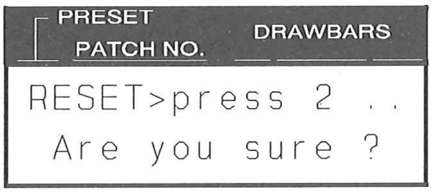
1. Touch the black EDIT Select Touch Button "ON". The red LED will light up indicating the EDIT mode is on.


SHIFT
>
ON/+
OFF/-
VIBRATO TUNE
PERCUSSION FOOT SW
DRAWBAR SPLIT
MIDI EFFECT
PRESET RESET
RECORD
EDIT
CANCEL
1
2
3
4
5
6
7
8

2. Touch the black number 8 [PRESET/RESET] Select Touch Button twice.

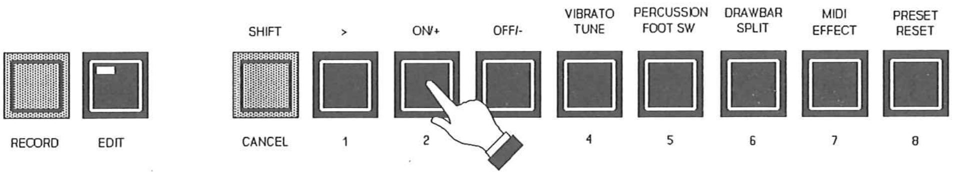

SHIFT
>
ON/+
OFF/-
VIBRATO TUNE
PERCUSSION FOOT SW
DRAWBAR SPLIT
MIDI EFFECT
PRESET RESET
RECORD
EDIT
CANCEL
1
2
3
4
5
6
8

The Information Center Display should show the following:

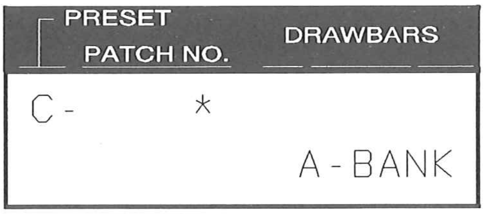

PRESET
PATCH NO.
DRAWBARS

RESET>press 2 . .
Are you sure ?

3. Touch the black number 2 Select Touch Button to Reset the CANCEL parameters back to default settings.


SHIFT
>
ON/+
OFF/-
VIBRATO TUNE
PERCUSSION FOOT SW
DRAWBAR SPLIT
MIDI EFFECT
PRESET RESET
RECORD
EDIT
CANCEL
1
2
4
5
6
7
8

The Information Center Display should go blank, then show the following if no Drawbars are out:


PRESET
PATCH NO.
DRAWBARS

C- *
A-BANK

All Reset

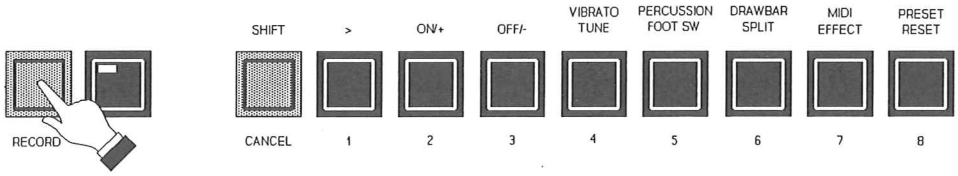
This clears all Presets and Patches and returns the XB-2 to factory default settings.

WARNING! If you have created your own Patches, doing the following procedure will erase any changes you made to the parameters, settings and registrations, returning the XB-2 to the original Hammond factory default settings.

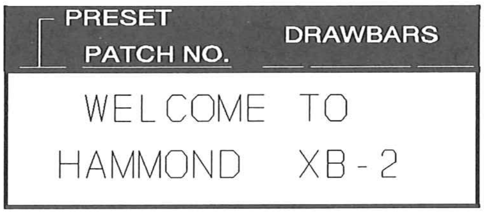
TRY THIS:

1. Make sure the XB-2 is "OFF"

2. With your right hand, touch and hold the gray RECORD Select Touch Button.

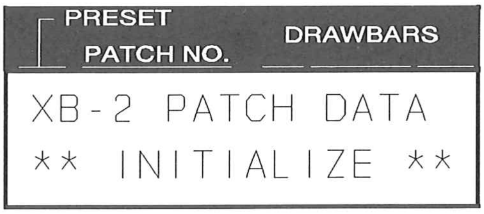

SHIFT
>
ON/+
OFF/-
VIBRATO TUNE
PERCUSSION FOOT SW
DRAWBAR SPLIT
MIDI EFFECT
PRESET RESET
RECORD
CANCEL
1
2
3
4
5
6
7
8

3. While continuing to hold the gray RECORD Select Touch Button, turn the XB-2's Power Switch "ON". Once the Information Center Display lights up, it should show the following:


PRESET
PATCH NO.
DRAWBARS

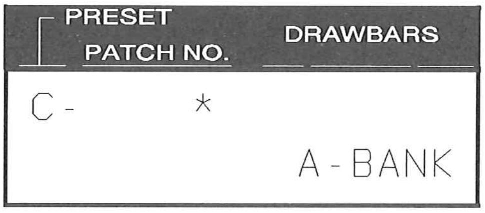
WELCOME TO
HAMMOND XB-2

4. Continue to hold the gray RECORD Select Touch Button while the words, "HAMMOND XB-2 Version2" spell out from left to right on the bottom line of the Information Center Display. As soon as the bottom line is completed, the display should change to the following for approximately 1 second:


PRESET
PATCH NO.
DRAWBARS

XB-2 PATCH DATA
** INITIALIZE **

5. If all the Drawbars are "OFF" (pushed all the way in) the Information Center Display should then change to a screen similar to this:



```
C -      *
             A - BANK
```

Release the gray RECORD Select Touch Button, and the XB-2 is ready for use.

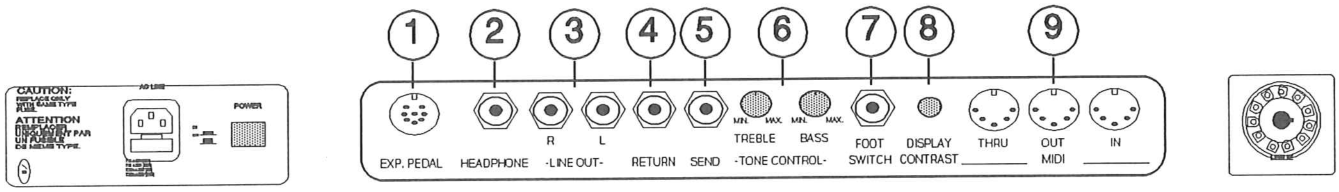
Hammond XB-2

Reference

REFERENCE

Accessory Panel

The Accessory Panels are located on the back of the XB-2.


1
2
3
4
5
6
7
8
9
CAUTION:
ATTENTION
POWER
EXP. PEDAL
HEADPHONE
R
L
-LINE OUT-
RETURN
SEND
MIN.
MAX.
MIN.
MAX.
TREBLE
BASS
-TONE CONTROL-
FOOT SWITCH
DISPLAY CONTRAST
THRU
OUT
IN
MIDI

1. Expression Pedal Jack -
   Connect the optional HAMMOND Expression Pedal to control the XB-2's volume. The optional HAMMOND Expression Pedal is specially designed for the XB-2 to reproduce the feeling of the original B-3 expression pedal. MIDI volume data is transmitted at the same time if you use this optional HAMMOND Expression Pedal.

2. Headphone Jack -
   The XB-2 is equipped with a stereo headphone jack so the XB-2 can be heard without connecting it to an external amplifier or speakers.

3. Line Out - Left & Right -
   These are the signal outputs for the XB-2. You may connect this to an external amplifier or tape recorder.

NOTE: Use the LEFT LINE OUT jack if you are connecting the XB-2 to a MONO amplifier.

4. Return Jack -
   Connect to the Send jack of an external EFFECTS box.

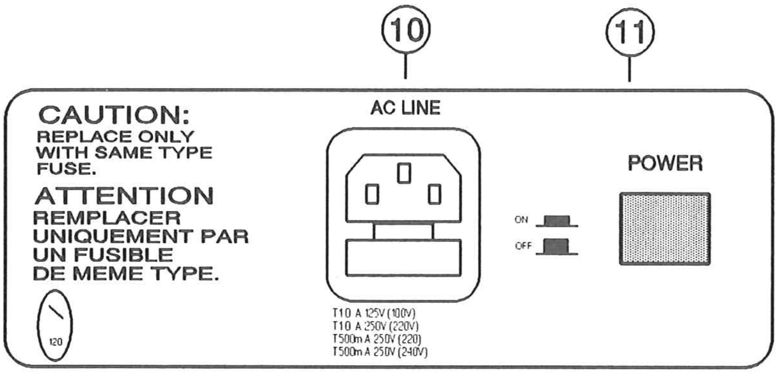
5. Send Jack -
   Connect to the Return jack of an external EFFECTS box.

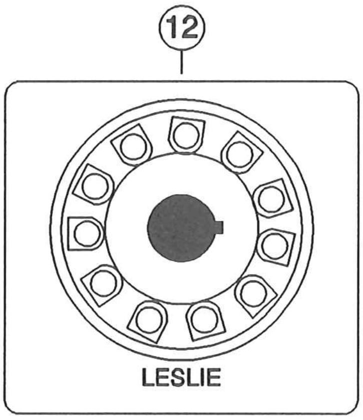
6. Tone Controls -
   The TREBLE and BASS Tones of the XB-2 can be controlled separately with the use of these two controls. Turn each control to the left (counter clockwise) for the MINIMUM amount of TREBLE or BASS. Turn each control to the right (clockwise) for the MAXIMUM amount of TREBLE or BASS.

7. Foot Switch Jack -
   Connect the optional HAMMOND Foot Switch to perform one of the 3 programmable functions: (1) Leslie "ON" or "OFF", (2) Sustain "ON" or "OFF", or (3) Preset switch.

8. Display Contrast -
   Turn left or right to adjust the contrast of the Information Center Display.

9. MIDI Connectors -
   Use these standard MIDI plugs to connect to outboard MIDI devices such as sequencers, sound modules and other devices.


10
11
CAUTION:
REPLACE ONLY
WITH SAME TYPE
FUSE.
ATTENTION
REMPLACER
UNIQUEMENT PAR
UN FUSIBLE
DE MEME TYPE.
120
AC LINE
T10 A 125V (100V)
T10 A 250V (220V)
T500mA 250V (220)
T500mA 250V (240V)
ON
OFF
POWER



10. A.C. Power Line Connector -
    Connect proper 3 wire power cord provided with the XB-2. You can change the power requirements by sliding the click switch to the proper position.

11. ON/OFF Power Switch -
    Push in to turn the XB-2 "ON". Push in again to turn the XB-2 "OFF".

12. 11-pin Leslie Connector -
    Use to connect an optional external Leslie™ Speaker. If you now own a Leslie™ Speaker with a 6-Pin Connector, contact your HAMMOND Pro-Line™ dealer to purchase an optional 6- to 11-Pin adapter.

Specifications

KEYBOARDS	1 61 Keyboard, Adjustable Split
DRAWBARS	16', $5^{1}/_{3}$', 8', 4', $2^{2}/_{3}$, 2', $1^{3}/_{5}$', $1^{1}/_{3}$', 1, Drawbar Voicing - B-Type, Mellow & Brite, Adjustable Fold Back, Drawbar Split, Lower Cancel, Lower Octave Up, Upper Sustain, Lower Sustain
PERCUSSION	Percussion 2 (4)', Percussion 3 ($2^{2}/_{3}$'), Fast Decay, Percussion Soft, Percussion Level, Percussion Drawbar Cancel, Percussion Key Tracking
VIBRATO	On/Off, V1, V2, V3, C1, C2, C3, Speed - Slow, Mid, Norm, Midfast, Fast
ATTACK	Slow Attack, No Click, Soft Click, Normal Click, Max Click
OVER DRIVE	On/Off, Depth (MOD Wheel)
TUNING	1 Hz Steps (430Hz - 450Hz)
TRANSPOSE	± 6 semitones
INFORMATION CENTER DISPLAY	16 Characters, 2 Lines
PRESETS	Cancel, Programmable Presets 1-8, 4 Banks (A,B,C,D), 128 Programmable Patch Library (1- 109 Factory Patches, 110 to 128 blank)
LESLIE	Slow, Fast Adjustable Slow & Fast Speed, Adjustable Rise & Fall Times
VELOCITY	Percussion Off, 1, 2 MIDI Velocity Off, 1-6
SUSTAINS	LM ON/OFF, UM ON/OFF, Short, Mid, Long
DIGITAL REVERB	4 Programs - Room, Live, Hall, Church
WHEELS	Modulation, Pitch Bend (± 12 Semitones)
CONTROLS	Power On/Off, Master Volume Control, Reverb Intensity Control, LCD Menu Display, LCD Contrast Control, Treble Adjustment Control, Bass Adjustment Control, Programmable Foot Switch
CONNECTIONS	MIDI IN, MIDI OUT, MIDI THRU, Foot Switch, Expression Pedal, Line Out Left, Line Out Right, Send, Receive, 11-Pin Leslie Connector

▶ Instrument Care

Cabinet

To clean the XB-2, use a soft cloth slightly moistened with water and a small amount of mild soap. After cleansing, immediately wipe dry with a soft dry cloth. Do not use any spray waxes, polish or solvents on finish.

Keys and Buttons

To clean keys and buttons, use a clean soft cloth moistened with water. Do not use any solvents, thinners or dryers such as alcohol, gasoline, lighter fluid, carbon tetrachloride, etc. These solutions may affect the letters and/or finish on the buttons and keys.

Moving Your XB-2

It is not necessary to bolt or fasten any parts of the instrument when moving. Reasonable care should be taken, however, to avoid any violent impact to or dropping of the instrument.

DISCLAIMER: Hammond maintains a policy of continuously improving and upgrading its instruments and therefore reserves the right to change specifications without notice. Although every attempt has been made to insure the accuracy of the descriptive contents of this owner's guide, total accuracy cannot be guaranteed. Should the player require further assistance, inquiries should first be made to your Authorized Hammond Dealer. If you still need further assistance then contact Hammond at the following addresses:

In Japan Contact:

HAMMOND SUZUKI Ltd.
25-12, Ryoke 2 Chome
Hamamatsu 430 (Shizuoka)
JAPAN

In the United States and Canada contact:

HAMMOND SUZUKI U.S.A. Inc.
733 Annoreno Dr.
Addison, IL 60101
UNITED STATES

In the United Kingdom contact:

HAMMOND U.K. Ltd.
Potash House
Drayton Parslow
Bucks, MK17 OJE
UNITED KINGDOM

In Europe contact:

HAMMOND SUZUKI EUROPE B.V.
Industriepark Hagestein
Ir. D.S. Tuynmanweg 4A
4131 PN Vianen
P.O. Box 282
4130 EG Vianen
THE NETHERLANDS

In Germany contact:

HAMMOND SUZUKI DEUTSCHLAND GmbH
Kirchstraße 19
D-7907 SETZINGEN/ULM
GERMANY

Technical materials are available and can be obtained by mailing a request to the appropriate address listed above marked ATTENTION: SERVICE DEPARTMENT.

CAUTION: Service instructions are for use by qualified personnel only. To avoid risk of electric shock, the user should not perform any servicing or changing of the instrument's specifications other than those listed in this guide. All other servicing should be referred to qualified service personnel.

CAUTION

Danger of explosion if lithium battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the equipment manufacturer. Discard used batteries according to manufacturer's instructions.

ADVARSELL

Lithiumbatteri. Eksplosionsfare ved fejlagtig håndering. Udskiftning må kun ske med batteri af samme fabrikat og type. Lebér det brugte batteri tilbage til leverandøren.

Norge:

ADVARSEL

Lithiumbatteri - Eksplosjonsfare. Ved utskiftning benyttes kun batteri som anbefalt av apparatfabrikanten. Brukt batteri returneres apparatleverandøren.

Sverige:

VARNING

Explosionsfara vid felaktigt batteribyte. Använd samma batterityp eller et ekvivalent typ som rekommenderes av apparattillverkaren, Kassera använt batteri enlig fabrikantens instruktion.

Finland:

VAROITUS

Paristo voi räjähtää, jos se on virheelliseeti ansennettu Vaihda paristo ainoastaan laitevalmistajan suosittelemaan tyyppiin, Hävitä käytetty paristo valmistajan ohjeiden mukaisesti.

Index

A.C. POWER (2)
  A.C. Power Line Connector (183)
  ON/OFF Power Switch (4)
ACCESSORY PANEL
  11-pin Leslie Connector (183)
  A.C. Power Line Connector (183)
  Display Contrast (183)
  Expression Pedal Jack (182)
  Foot Switch Jack (182)
  Headphone (182)
  Line Out - Left & Right (182)
  MIDI Connectors (183)
  ON/OFF Power Switch (183)
  Return Jack (182)
  Send Jack (182)
  Tone Controls (182)
ADDITIONAL CONTROLS (6)
  Master Volume Control (7)
  Modulation Wheel (6)
  ORGAN SOLO Touch Tab (6)
  Pitch Bend Wheel (6)
  Reverb Gain Control (7)
ADVANCED FEATURES
  Drawbars (36)
  Foot Switch (122)
  Leslie (78)
  MIDI (134)
  Over Drive (82)
  Percussion (49)
  Preset (92)
  Reset (24)
  Reverb (84)
  Split (61)
  Tune (116)
  Vibrato (73)
AUDIO CONTROL CONNECTIONS (3)
BASIC CONTROLS (4)
  Drawbars (5)
  Information Center Display (4)
  ON/OFF Power Switch (4)
  Touch Buttons (5)
  Touch Tabs (5)
BASIC HOOK-UP (2)
  A.C. Power (2)
  Audio and MIDI Control Connections (3)
  Connecting to a Leslie Speaker (2)
CANCEL Mode (88)
DATA CHART
  Bender Length Options (121)
  Drawbar Attack/Click Options (40)
  Drawbar Fold Back Options (47)
  Drawbar Foldback Options (47)
  Drawbar Sustain Options (42)
  Drawbar Voicing Options (38)
  FOOT SW1 FUNCTIONS (124)
  FOOT SW2 FUNCTIONS (126)
  Global Initial Data (114)
  In Split Gate (142)
  Leslie Rotary Parameters (81)
  Memory Dump - System Exclusive Information (173)
  MIDI Channel Options (144)
  MIDI Channels - Default Settings (143)
  MIDI Controller Options (157)
  MIDI Drawbar Data (162)
  MIDI Expression (140)
  MIDI Implementation (Each Channel) (161)
  MIDI Implementation Chart (160)
  MIDI Keymap Options (147)
  MIDI Keyoctave Options (149)
  MIDI NRPN Data (163)
  MIDI Program Number Options (151)
  MIDI Velocity Curve Selections (155)
  MIDI Volume Options (153)
  OMNI/LOCAL Options (137)
  Packets (172)
  Parameter Data Table (101)
  Patch Parameter List (102)
  Percussion Level Options (54)
  Percussion Touch and Velocity (52)
  Pitch Bend Options (121)
  Preset Bank Information (91)
  Preset Select (94)
  Reverb Program Options (86)
  Reverb Programs (86)
  Split LM Cancel (63), (70)
  Split Octave Select (68)
  Vibrato Speed Options (75)
  XB-2 Key Data (133)
DRAWBARS (5), (25)
  Advanced Feature - Drawbar Attack (39)
  Advanced Feature - Drawbar Fold Back (43)
  Advanced Feature - Drawbar Sustain (41)
  Advanced Feature - Drawbar Voice (37)
  Advanced Feature - MIDI Drawbar Filter (159)
  BLACK DRAWBARS (29)
  Brilliance (28)
  BROWN DRAWBARS (30)
  Color Groups - Black Drawbars (29)
  Color Groups - Brown Drawbars (30)
  Color Groups - White Drawbars (29)
  Foundation (28)
  How Harmonic Drawbars Work (27)
  MIDI Drawbar Data (162)
  Sound Groups (28)
  Sub (28)
  Tone Families By Shape - Diapason family (34)
  Tone Families By Shape - Flute family (32)
  Tone Families By Shape - Reed family (33)
  Tone Families By Shape - String family (35)
  WHITE DRAWBARS (29)
EDIT MODE
  DRAWBAR Menu (18)
  EDIT Touch Button (10)
  EFFECT Menu (22)
  FOOT SW Menu (17)
  MIDI Menu (20)
  PERCUSSION Menu (16)
  PRESET Menu (23)
  Prompter Mark [>] (11)
  RESET Menu (24)
  SPLIT Menu (19)
  TUNE Menu (15)
  VIBRATO Menu (14)
EFFECTS (71)
  Chorus (73)
  Leslie (78)
  Over Drive (82)
  Reverb (84)
  Vibrato (73)
EXPRESSION
  Advanced Feature - MIDI Volume (152)
  Advanced Feature - MIDI Volume Out Filter (159)
  Expression Pedal Jack (182)
FOOT SWITCH
  Function Select (123)
  Polarity & Mode Select (125)
GETTING STARTED (1)
  Additional Controls - Master Volume Control (7)
  Additional Controls - Modulation Wheel (6)
  Additional Controls - ORGAN SOLO Touch Tab (6)

    Additional Controls - Pitch Bend Wheel (6)
    Additional Controls - Reverb Gain Control (7)
    Basic Controls - Drawbars (5)
    Basic Controls - Information Center Display (4)
    Basic Controls - ON/OFF Power Switch (4)
    Basic Controls - Touch Buttons (5)
    Basic Controls - Touch Tabs (5)
    Basic Hook-Up - A.C. Power (2)
    Basic Hook-Up - Audio and MIDI Control Connections (3)
    Basic Hook-Up - Connecting to a Leslie Speaker (2)
INFORMATION CENTER DISPLAY (4), (9)
    How to Edit Parameters (11)
    Menu Mode (14)
    Menus (14)
    Prompter Mark [>] (11)
    Touch Button Functions (10)
KEYBOARD SPLIT (59)
    Advanced Feature - Split "ON" & Split Point (62)
    Advanced Feature - Split Drawbar Save (65)
    Advanced Feature - Split LM Cancel (69)
    Advanced Feature - Split Octave Select (67)
    Advanced Features (61)
    Split LM Cancel (70)
    Split LM Cancel Data Chart (63)
    Split Octave Select (68)
    Upper and Lower Manuals (60)
LESLIE
    Advanced Feature - Leslie ON/OFF (79)
    Advanced Feature - Leslie Speed (80)
    Connecting to a Leslie Speaker (2)
    LESLIE FAST Touch Tab (78)
MASTER TUNE (117)
MASTER VOLUME CONTROL (7)
MENU MODE (14)
MENUS
    DRAWBAR Menu (18)
    EFFECT Menu (22)
    FOOT SW Menu (17)
    MEMORY DUMP Menu (164)
    MIDI Menu (20)
    PERCUSSION Menu (16)
    PRESET Menu (23)
    RESET Menu (24)
    SPLIT Menu (19)
    TUNE Menu (15)
    VIBRATO Menu (14)
MIDI (127)
    A Word About What MIDI Can Do (128)
    Advanced Feature - Drawbar Filter (159)
    Advanced Feature - IN SPLIT GATE (141)
    Advanced Feature - MIDI Channels (143)
    Advanced Feature - MIDI Controller Numbers (156)
    Advanced Feature - MIDI EXP (139)
    Advanced Feature - MIDI Keymap (145)
    Advanced Feature - MIDI Keyoctave (148)
    Advanced Feature - MIDI LOCAL ON/OFF (136)
    Advanced Feature - MIDI NRPN ON/OFF (138)
    Advanced Feature - MIDI OMNI ON/OFF (136)
    Advanced Feature - MIDI Program Numbers (150)
    Advanced Feature - MIDI Volume (152), (154)
    Advanced Feature - Program Number Filter (159)
    Advanced Feature - Volume Out Filter (159)
    In Split Gate Data Chart (142)
    Manuals and Zones (132)
    Memory Dump - System Exclusive Information (173)
    MIDI Channel Options (144)
    MIDI Channels - Default Settings (143)
    MIDI Control Connections (3)
    MIDI Controller Options (157)
    MIDI Drawbar Data (162)
    MIDI Expression (140)
    MIDI Implementation (Each Channel) (161)
    MIDI Implementation Chart (160)
    MIDI Keymap Options (147)
    MIDI Keyoctave Options (149)
    MIDI Menu (20)
    MIDI NRPN Data (163)
    MIDI Program Number Options (151)
    MIDI Transmission - CONTROL CHANGE (131)
    MIDI Transmission - NOTE ON / NOTE OFF (131)
    MIDI Transmission - PROGRAM CHANGE (131)
    MIDI Transmission - VELOCITY (131)
    MIDI Velocity Curve Selections (155)
    MIDI Volume Options (153)
    OMNI/LOCAL Options (137)
    Packets (172)
    Program Number Filter (159)
    Transmitting MIDI information (131)
    Typical MIDI Applications - A personal computer (130)
    Typical MIDI Applications - A synthesizer (130)
    Typical MIDI Applications - MIDI IN/MIDI OUT (128)
    Typical MIDI Applications - MIDI THRU (129)
    Typical MIDI Applications - Sound Modules (130)
    XB-2 Key Data Chart (133)
MODULATION WHEEL (6)
ON/OFF POWER SWITCH (4)
ORGAN SOLO Touch Tab (6)
OVER DRIVE (82)
    Advanced Feature - Over Drive ON/OFF (82)
PARAMETERS, HOW TO EDIT (11)
    EDIT Mode (11)
    ON/OFF Touch Buttons (12)
    Prompter Mark [>] (11)
PATCHES (90)
PERCUSSION (48)
    Advanced Feature - Percussion Decay (50)
    Advanced Feature - Percussion Drawbar Cancel (55)
    Advanced Feature - Percussion Key Tracking (57)
    Advanced Feature - Percussion Level (53)
    Advanced Feature - Percussion Soft (50)
    Advanced Feature - Percussion Touch (51)
    Advanced Feature - Percussion Velocity (51)
    Percussion Level Data Chart (54)
    Second Harmonic Touch Tab (48)
    Third Harmonic Touch Tab (48)
    Touch and Velocity Data Chart (52)
PITCH BEND WHEEL (6)
    Advanced Feature - Bender Length (120)
PRESET
    Advanced Features (92)
    Preset Select Data Chart (94)
PRESETS (88)
    CANCEL Mode (88)
    Preset Bank Information (91)
    Saving Preset Data (99)
REFERENCE (181)
    Instrument Care (185)
    Specifications (184)
RESET
    All Reset (178)
    Selective Reset (176), (177)
RESET Section (175)
REVERB
    Advanced Feature - Reverb Program Select (84)
    Reverb Gain Control (7), (84)
SPECIAL ADVANCED FEATURES (115)
    FOOT SW1 - Function Select (123)
    FOOT SW2 - Polarity & Mode Select (125)
    TUNE1 - Master Tune (117)
    TUNE2 - Transpose (118)

  - TUNE3 - Bender Length (120)
- SPECIAL MIDI FEATURES (164)
  - Memory Dump - Data Out (165)
  - Memory Dump - Data Protect (168)
  - Memory Dump - Drawbar & Switch Data Out (170)
- TOUCH BUTTON FUNCTIONS (10)
- TOUCH BUTTONS (5)
  - EDIT Touch Button (10)
  - SELECT Touch Buttons (5)
  - TOUCH AND HOLD Touch Buttons (6)
  - TOUCH ON / TOUCH OFF Touch Buttons (6)
- TOUCH TABS (5)
  - LESLIE FAST Touch Tab (78)
  - ORGAN SOLO Touch Tab (6)
  - VIBRATO ON Touch Tab (73)
- TRANSPOSE (118)
- UPPER AND LOWER MANUALS (60)
- VIBRATO
  - Advanced Feature - Vibrato Mode & Speed (74)
  - Advanced Feature - Vibrato Split (76)
  - VIBRATO ON Touch Tab (73)

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XB-2 Owner's Playing Guide Version 2.00